PB85-135085

Evaluation of the Asbestos-in-Schools Identification and Notification Rule

Battelle Columbus Labs., Washington, DC

Prepared for

Environmental Protection Agency, Washington, DC

Oct 84

U.S. Department of Commerce
National Technical Information Service
NTIS

United States
Environmental Protection
Agency

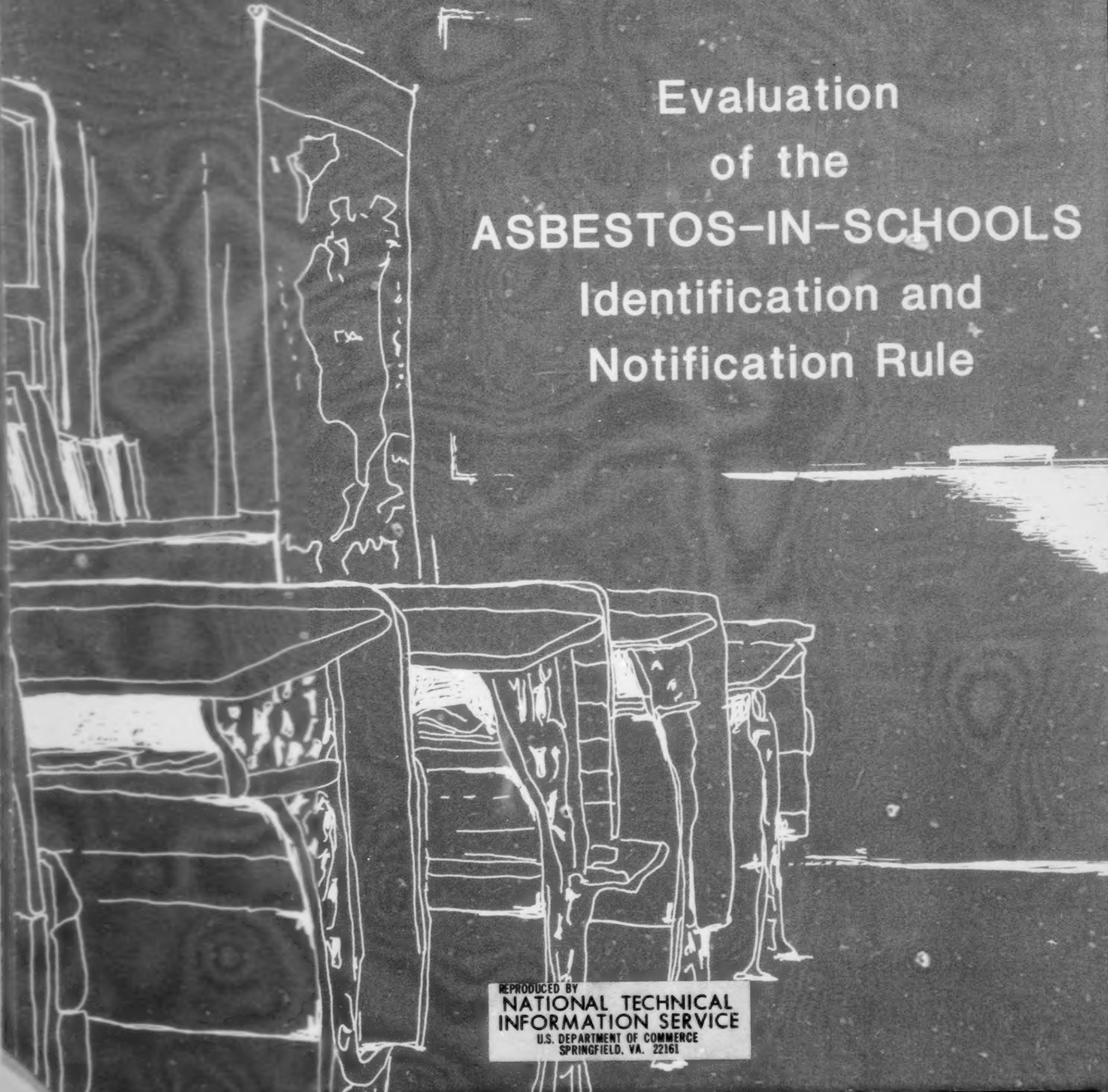
Office of
Toxic Substances
Washington, D.C. 0460

EPA 560/5-84-005
October 1984

PB85-135085

Toxic Substances

EPA



Evaluation of the ASBESTOS-IN-SCHOOLS Identification and Notification Rule

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

50272-101

REPORT DOCUMENTATION PAGE

1. REPORT NO.

2.

3. Recipient's Accession No. PB85 135085

4. Title and Subtitle
Evaluation of the Asbestos-In-Schools Identification and Notification Rule

5. Report Date June 15, 1984

6.

7. Author(s)
Janet Greenblatt

8. Performing Organization Rept. No. G8149-1501

9. Performing Organization Name and Address
Battelle Laboratories, 505 King Avenue, Columbus
Ohio 43201
Westat Inc., 1650 Research Boulevard, Rockville,
Maryland 20850

10. Project/Task/Work Unit No. Task 15

11. Contract(C) or Grant(G) No.
(C) A-3043(8149)-270
(G)

12. Sponsoring Organization Name and Address
Exposure Evaluation Division
Office of Toxic Substances
Environmental Protection Agency
Washington, D. C. 20460

13. Type of Report & Period Covered
Peer Review
March '83-May '84

14.

15. Supplementary Notes

16. Abstract (Limit: 200 words)

The Asbestos-in-Schools Identification and Notification Rule effective June 28, 1982, required all public and private local education agencies (LEAs) to (1) inspect for friable materials; (2) sample and analyze these materials when found; (3) post notice of inspection results and notify employees and parents in schools with asbestos-containing friable materials (ACFM); and (4) maintain records of the findings at the LEAs and schools. A stratified systematic sample of 1,800 public and 800 private LEAs was randomly selected proportionate to the square root of enrollment. A telephone survey found that 83 percent of the LEAs have begun or completed inspections and 94 percent of all schools have been inspected. Of the schools inspected, 35 percent found ACFM. Almost all LEAs with ACFM have abatement programs (93%), about one-third of which (31%) are operations/maintenance only. Only 9 percent of the LEAs were in compliance with the rule by June 28, 1983, the rule's compliance date; and 11 percent were by January 1984, the date of the survey. Record-keeping and notification were the major problem areas of noncompliance. QA site visits were made to 38 LEAs and 94 schools within these LEAs were inspected. The LEA data collected during the site visits agreed substantially with the telephone survey data.

17. Document Analysis a. Descriptors

b. Identifiers/Open-Ended Terms
Asbestos
Compliance Monitoring

c. COSATI Field/Group

18. Availability Statement

19. Security Class (This Report)

20. Security Class (This Page)

21. No. of Pages 245

22. Price

(See ANSI-Z39.18)

See Instructions on Reverse

OPTIONAL FORM 272 (4-77)
(Formerly NTIS-35)
Department of Commerce

October 1984

EVALUATION OF THE EPA ASBESTOS-IN-SCHOOLS IDENTIFICATION AND NOTIFICATION RULE

by

Janet Greenblatt
Westat, Inc.
1650 Research Boulevard
Rockville, Maryland 20850

Subcontract No. A-3043(8149)-270

BATTELLE COLUMBUS LABORATORIES
Washington Operations
2030 M Street, N. W.
Washington, D. C. 20036

Contract No. 68-01-6721

Cindy Stroup and Joseph J. Breen, Task Managers
Joseph S. Carra and Frederick W. Kutz, Project Officers
Exposure Evaluation Division
Office of Pesticides and Toxic Substances
U. S. Environmental Protection Agency
Washington, D. C. 20460

i.a

DISCLAIMER

This report was prepared under contract to an agency of the United States Government. Neither the United States Government nor any of its employees, contractors, subcontractors, or their employees makes any warranty, expressed or implied, or assumes any legal liability or responsibility for any third party's use of or the results of such use of any information, apparatus, product, or process disclosed in this report, or represents that its use by such third party would not infringe on privately owned rights.

ACKNOWLEDGEMENTS

The author of this report would like to thank all those whose efforts contributed to the success of the survey. We acknowledge with gratitude the people from the EPA who provided technical assistance and administrative support: Cindy Stroup, Joseph Breen, Joseph Carra and Frederick Kutz. Connie DeRocco of OTS reviewed the questionnaire at critical stages in its creation. Dave Mayer participated in several aspects of the study including review of the questionnaire as well as training of telephone interviewers and field investigators. We would also like to thank Wolfgang Brandner for his assistance in training the field investigators. David Morganstein of Westat and Bertram Price of Battelle contributed to the planning stages of the survey. For overall project management support the author thanks David Cox of Battelle and Stephen Dietz of Westat. Additional administrative support was provided by Robert Learmonth of Westat.

The success of the project depended directly on the staff that performed the various tasks. In particular the author wishes to acknowledge: Barbara Kreling of Westat who supervised the telephone survey operations assisted by Susan Englehart in the Westat Telephone Research Center; John Edmonds and Dahlia Kahane of Westat who programmed the statistical analysis tables; and Joan Fried and Mary Tarkowski of Westat and Marilyn Gabriel of Midwest Research Institute who conducted the field investigations.

TABLE OF CONTENTS

SECTION PAGE

EXECUTIVE SUMMARY. ix

1 INTRODUCTION 1-1
  Background 1-1
  Survey Objectives and Design 1-4

2 CONCLUSIONS. 2-1

3 QUALITY ASSURANCE PROGRAM. 3-1
  Sample Selection 3-1
  Data Collection. 3-2
  Response Rates 3-2
  Data Validation and Processing 3-4
  Site Visits to LEAs. 3-4
  Results of Site Visits 3-6
  Results of Comparison of Compliance Monitoring Efforts with Questionnaires for Selected LEAs. . 3-12

4 SAMPLE DESIGN. 4-1
  Construction and Stratification of the Frame . . . 4-1
  Probability Sample Design. 4-1
  Sample Size Specification. 4-2
  Precision of the Estimates 4-2

5 STATISTICAL ANALYSES OF TELEPHONE SURVEY DATA. . . . 5-1
  Weighting. 5-1
  Variance Estimation. 5-2
  Results of Statistical Analyses. 5-3

6 METHODOLOGICAL REPORT. 6-1
  Overview of Survey 6-1
  The Questionnaire. 6-2
  Pretest. 6-3
  Interviewer Training 6-4
  Survey Response and Follow-Up Procedures 6-4
  Telephone Quality Control and Data Retrieval . . . 6-5
  Data Processing. 6-6

Preceding page blank

TABLE OF CONTENTS (continued)

LIST OF APPENDICES

SECTION PAGE

A STATISTICAL TABULATIONS. A-1

B QUESTIONNAIRE B-1

C INTERVIEWER PROCEDURES MANUAL C-1

D QA VISIT FIELD MANUAL D-1

TABLE OF CONTENTS (continued)

LIST OF TABLES

Number		Page
1	Results of site visits to LEAs	3-8
2	Results of site visits to and inspections of schools	3-10
3	Results of comparison of EPA compliance monitoring reports to LEA questionnaires	3-14
4	Coefficients of variation, standard errors, and confidence boundaries for selected totals.	5-4
5	Characteristics of public and private LEAs as of January, 1984.	5-7
6	For LEAs claiming exemption to rule, reason for exemption.	5-8
7	The use of the EPA Technical Assistance Program.	5-10
8	Number of LEAs that had and used EPA guidance documents to conduct inspections	5-11
9	LEAs with and without Form 7730-1, "Inspections for Friable Asbestos-Containing Materials"	5-12
10	LEAs that complied with the Asbestos-in-Schools Rule	5-14
11	Asbestos-In-Schools Rule requirements to be met by June 28, 1983	5-15
12	Compliance requirements for LEAs that met most aspects of the Rule	5-15
13	Areas of noncompliance with most aspects of the Asbestos-In-Schools rule by January 1984.	5-16
14	Results of inspections in schools as of January, 1984.	5-17
15	Total square footage, employees and students in schools with asbestos-containing friable materials and total square footage by abatement work completed	5-18

TABLE OF CONTENTS (continued)

LIST OF TABLES

Number | | Page
16 Percent asbestos-containing friable materials in pipe wrap in LEAs 5-20
17 Schools where ACFM were found, by construction date 5-22
18 Compliance with employee notification requirements for LEAs that found asbestos-containing friable materials 5-24
19 Schools that provided notice to parents and date first notice made from LEA with asbestos-containing friable materials. 5-25
20 Number of schools doing abatement, by type of abatement and status of abatement work. 5-27
21 Average cost per square foot of abatement in schools in which work has been completed 5-29
22 Average square feet in schools by method of abatement for schools that have completed work 5-29
23 Response rates for Asbestos-In-Schools telephone survey 6-2
24 Final status of telephone interviews for Asbestos-In-Schools Survey 6-5

FINAL REPORT

EVALUATION OF THE EPA ASBESTOS-IN-SCHOOLS IDENTIFICATION AND NOTIFICATION RULE

EXECUTIVE SUMMARY

The U.S. Environmental Protection Agency's Office of Toxic Substances has an ongoing program concerning asbestos in schools. As part of this program, the EPA Identification and Notification Rule was promulgated in 1982. The rule, effective June 28, 1982, requires local education agencies (LEAs) to conduct inspections for friable materials, take samples and analyze them using polarized light microscopy (PLM), inform employees and parents of findings and keep records of inspection results at the LEA and schools. LEAs were required to comply with all aspects of the rule by June 28, 1983.

In order to evaluate the effectiveness of the regulation, EPA conducted a national survey of 2,600 LEAs. The survey was conducted with two overall objectives: (1) to determine how many local education agencies have complied with the rule by the end of the compliance period; and (2) to describe local education agencies' inspection methods, results, and asbestos abatement plans.

A national sample of 1,800 public school districts and 800 private schools was randomly selected and a questionnaire was administered by telephone. The telephone survey was begun on December 12, 1983 and completed on February 10, 1984. The sample sizes were large enough to produce national total estimates and reliable statistics for subpopulations of interest.

An overall response rate of 96.5 percent was achieved during the survey.

A quality assurance plan was implemented which covered all aspects of this study: construction of LEA sampling lists, sample selection, questionnaire design, data collection and analysis. A subsample of eight metropolitan areas was selected for on-site inspections of LEAs to verify the information obtained during the telephone interviews. The information gathered during quality assurance visits was generally consistent with that from the telephone survey on all but one variable--the number of schools with friable materials. One reason for this disparity is that schools do not know whether to report friable materials which have been encapsulated or enclosed. It was also discovered that LEAs missed friable materials in 25 out of 90 schools previously inspected by the LEAs and the majority (in 20 of the 25 schools) of overlooked friable materials were limited to boiler rooms. This suggests that LEAs do not realize that boiler rooms require inspection. This finding also indicates that the survey estimate of the number of schools with asbestos-containing friable materials (ACFM) may be an underestimate.

SUMMARY OF THE SURVEY RESULTS

A detailed statistical analysis of the data collected during the telephone survey was conducted. For some estimates, a distinction is made between sprayed- or trowelled-on ACFM and boiler/pipe ACFM. The reasons for the distinction include: 1) direct access to boiler/pipe insulation is typically limited to custodial and maintenance personnel; and 2) it is difficult to provide accurate square footage estimates for pipe/boiler insulation materials. It must be noted that the airborne transport of asbestos released from boiler/pipe insulation sites to adjacent and remote areas within a building is possible and is therefore of concern to other building occupants.

The statistics in this report are estimates derived from a sample survey and, as such, are subject to errors of response and reporting as well as to sampling variability. For this reason intervals have been constructed with a prescribed confidence that they include the average result over all possible samples. Estimates of percentages presented in this section are followed by their 95 percent confidence intervals. Results are expressed in terms of LEAs and schools. There are 32,946 LEAs, with at least one school built before January 1979; 14,505 are public LEAs, 18,441 are private LEAs. There are 95,566 schools in these LEAs; 76,118 are public and 19,448 are private schools.

Presented below are the major findings of our data collection efforts for the two LEA subgroups: public school districts and private schools. Five categories of statistics are presented: inspection, abatement, compliance, exposure and quality assurance.

Inspection Results

- 83% ± 3% (27,422) of the LEAs have begun or completed inspections for friable materials; 94% ± 3% (13,673) of the public and 75% ± 5% (13,749) of the private LEAs.
- 31% ± 3% (8,565) of the LEAs that have begun or completed inspections used the EPA Technical Assistance Program (TAP) which consists of a toll-free number, regional technical advisors to assist LEAs and written guidelines for conducting inspections; 36% ± 3% (4,894) of the public and 27% ± 5% (3,671) of the private LEAs.
- 94% ± 3% (8,080) of the LEAs that used the TAP said it met their needs; 94% ± 3% (4,583) of the public and 95% ± 5% (3,497) of the private LEAs.

- 93% ± 5% (89,312) of schools have been inspected for friable materials; 98% ± 6% (74,607) of the public and 76% ± 8% (14,705) of the private schools.

- 40% ± 7% (11,031) of the LEAs that inspected found ACFM in one or more of their schools; 50% ± 5% (6,842) of the public and 30% ± 15% (4,189) of the private schools.

- 35% ± 3% (30,830) of inspected schools were found to contain ACFM; 35% ± 4% (26,137) of the public and 32% ± 7% (4,693) of the private schools.

- 45% ± 3% (4,971) of the LEAs that inspected and found ACFM in one or more schools, have asbestos materials limited to boiler/pipe insulation and not in sprayed- or trowelled-on material; 40% ± 4% (2,710) of the public and 54% ± 7% (2,261) of the private schools.

Abatement Programs

There are a total of 11,031 LEAs with at least one school that contains ACFM, 6,842 public and 4,189 private. There are 30,830 schools with ACFM; 26,137 public and 4,693 private.

- 67% ± 5% (20,598) of the schools with ACFM have some type of abatement work completed or in progress; 67% ± 6% (17,627) of the public and 63% ± 14% (2,972) of the private schools.

- 23% ± 5% (7,134) of the schools with ACFM are planning some type of abatement action; 23% ± 6% (6,014) of the public and 24% ± 13% (1,120) of the private schools.

- 29% ± 5% (3,193) of LEAs with ACFM are using removal as the sole method of abatement; 32% ± 4% (2,158) of the public and 25% ± 8% (1,035) of the private LEAs.

- 28% ± 4% (3,055) of LEAs with ACFM are using special operations and maintenance procedures and periodic reassessment as the sole method of abatement; 29% ± 4% (1,955) of the public and 25% ± 8% (1,060) of the private LEAs.

- The remaining LEAs are using more than one method of abatement.

- Following is a distribution of the schools with ACFM using each abatement method. These percentages add to more than 100% because some schools use more than one method.
  - Removal is used or will be used by 39% ± 5% (12,053) of the schools.
  - Enclosure is used or will be used by 15% ± 3% (4,560) of the schools.
  - Encapsulation is used or will be used by 40% ± 4% (12,408) of the schools.
  - Operations/maintenance is used by 41% ± 4% (12,733) of the schools.

Compliance Results

The following results present statistics on the number of LEAs complying with the broad aspects of the Asbestos-In-Schools Rule requirements. Because of the limits when administering a telephone interview, it was not possible to measure compliance with every provision of the rule. LEAs were required to (1) inspect all school building for friable materials, (2) sample all friable materials (at least three samples per homogeneous sampling area) unless all friable materials are declared in writing to contain asbestos, (3) analyze bulk samples using polarized light microscopy (PLM), (4) notify custodians, employees and parents if asbestos-containing friable materials are found in writing and post EPA form 7730-3 in certain areas of the school building, and (5) maintain records at LEAs and schools on Form 7730-1 and keep records where asbestos is located and copies of all notifications.

Following are the compliance results for LEAs with at least one school built before January 1, 1979. There are 32,946 such LEAs; 14,505 public and 18,441 private.

- 9% ± 2% (2,899) of the LEAs were in compliance with all aspects of the rule by June 28, 1983; 11% ± 2% (1,529) of the public and 7% ± 3% (1,370) of the private LEAs.
- 11% ± 2% (3,638) of the LEAS were in compliance with all aspects of the rule by January 1, 1984; 13% ± 2% (1,943) of the public and 9% ± 3% (1,695) of the private LEAs.

There were a number of LEAs that were not in strict compliance with the rule but did make an effort to comply. Frequent areas of violation were an insufficient number of bulk samples taken (less than 3) and the lack of use of the EPA forms. The LEAs in compliance with most aspects of the rule did (1) inspect all of their schools, (2) sample and analyze all friable materials, (3) notify employees and parents, and (4) keep some documentation on file. Statistics are presented as of June 28, 1983, the date required for compliance by the rule, and as of January 1, 1984, which shows the compliance status at the time of this survey. Following are the compliance results for these LEAs.

- 24% ± 2% (7,999) of the LEAs were in compliance with most aspects of the rule by June 28, 1983, 25% ± 2% (3,595) of the public and 24% ± 3% (4,405) of the private LEAs.
- 34% ± 2% (11,050) of the LEAs were in compliance with most aspects of the rule by January, 1984; 36% ± 3% (5,179) of the public and 32% ± 3% (5,871) of the private LEAs.

Following are the compliance results for LEAs with at least one school with ACFM. There are 11,031 such LEAs; 6,842 public and 4,189 private.

- 2% ± 2% (212) of the LEAs with ACFM were in compliance with all aspects of the rule by June 28, 1983; 2% ± 2% (122) of the public and 2% ± 2% (90) of the private LEAs.
- 4% ± 2% (437) of the LEAs with ACFM were in compliance with all aspects of the rule by January 1, 1984; 3% ± 2% (226) of the public and 5% ± 2% (211) of the private LEAs.

Following are the compliance results for the LEAs with at least one school with ACFM that attempted to comply with most aspects of the rule as defined above.

- 6% ± 2% (651) of the LEAs with ACFM were in compliance with most aspects of the rule by June 28, 1983; 5% ± 2% (368) of the public and 7% ± 2% (283) of the private LEAs.
- 21% ± 3% (2,348) of the LEAs with ACFM were in compliance with most aspects of the rule by January 1, 1984; 20% ± 4% (1,393) of the public and 23% ± 6% (955) of the private LEAs.

An analysis was conducted of the LEAs that did not comply with most aspects of the rule by January 1984. The purpose was to ascertain the effect each of the primary rule requirements (inspection, sampling, notification and documentation) had on the compliance statistics. There are 32,946 LEAs with at least one school built before January 1, 1979; 14,505 public and 18,441 private. The results of this analysis are as follows:

- 19% ± 3% (6,405) of the LEAs failed to comply because they did not complete inspections of all of their schools; 10% ± 3% (1,497) of the public and 27% ± 5% (4,908) of the private LEAs.
- 20% ± 2% (6,738) of the LEAs failed to comply because they did not document inspection results; 16% ± 3% (2,325) of the public and 24% ± 5% (4,413) of the private LEAs.
- 13% ± 3% (4,417) of the LEAs failed to comply with more than one aspect of the rule; 20% ± 3% (2,853) of the public and 8% ± 4% (1,564) of the private LEAs.

The same examination was made of LEAs with ACFM that failed to comply with most aspects of the rule by January 1984. There are 11,031 LEAs with ACFM; 6,842 public and 4,189 private. The findings for these LEAs are:

- 31% ± 5% (3,434) of the LEAs with ACFM failed to comply because they did not notify employees and/or parents of the presence of asbestos; 32% ± 5% (2,198) of the public and 30% ± 8% (1,236) of the private LEAs.

All other reasons for noncompliance were less than 10 percent. The aggregated statistics reveal that:

- 34% ± 5% (3,762) of the LEAs with ACFM failed to comply with more than one aspect of the rule; 35% ± 5% (2,379) of the public and 32% ± 8% (1,343) of the private LEAs.

These findings show that inspection and documentation were problem areas of significant noncompliance. For LEAs that found ACFM, failure to notify employees and/or parents was by far the most prominant reason for noncompliance.

Exposure to ACFM in Schools

- 35% ± 3% of inspected schools have ACFM; 34% ± 3% of all students are enrolled in these schools.
- 169,285,000 ± 25,600,000 square feet of sprayed or trowelled-on ACFM was reported to be in schools. This number does not include pipe or boiler insulation for which square footage is not available.
- 15,035,000 ± 1,514,000 students are in schools with ACFM:
    - 10,678,000 ± 1,075,000 in schools with at least some sprayed or trowelled-on ACFM; and
    - 4,357,000 ± 439,000 in schools with ACFM limited to pipe or boiler insulation.
- 1,386,000 ± 192,000 school employees are in schools with ACFM.

Quality Assurance

Quality Assurance (QA) site visits were made to eight metropolitan areas in which 38 LEAs were visited (17 public and 21 private) and 94 schools within these LEAs were inspected (73 public and 21 private). One superintendent refused to allow the monitor to visit, giving an overall LEA response rate of 97.4 percent. The purposes of the site visits were (1) to verify that the information collected during the telephone interviews corresponded to what was on file at the LEA and (2) to validate that the information reported by the LEA about the schools matched the situation at the schools.

The data collected during the site visits indicate that the survey results matched the records on file at the LEAs. Areas of disagreement could be accounted for and are not believed to have any significant influence on the statistics reported on herein. Shown below are the major findings from the site visits:

- Some LEAs and school officials are unable to respond to questions about inspections in a valid and reliable manner due to turnovers in personnel and the failure to maintain adequate records. Although this is a potential source of error, the site visit results show that such errors at times overestimated and at times underestimated the number of schools with ACFM and therefore do not imply a consistent bias in the national estimates.
- Some schools, due to inadequate inspections, did not report friable materials on pipes and boilers that were present. This may lead to an underestimate of the amount of friable material in schools nationally.
- Some schools were more likely to report at the site visit the presence of friable materials which had been enclosed or encapsulated. On the questionnaire, LEAs were requested to give the number of schools in which friable materials had been found regardless of whether those materials had been enclosed or encapsulated. This may lead to an underestimate of the amount of friable materials in schools nationwide.

- Some schools failed to report friable insulation on pipes and boilers because they did not understand inspection of boiler rooms was required by the rule. This will contribute to underestimating the amount of friable materials on pipes and boilers nationwide.
- On balance, we believe that our nationwide estimates of the presence of friable materials predominantly on pipes and boilers may be low. An estimated 89% of the schools in the survey with friable materials also have ACFM; therefore the number of schools with ACFM on pipes and boilers is also likely to be an underestimate.
- Most LEAs are instructing their schools with ACFM to notify employees and parents, but notifications are not being implemented by some schools.
- Some schools are reluctant to notify parents in schools with ACFM when friable materials are limited to pipe wrap in boiler rooms.

Examination of the EPA Compliance Monitoring Reports

The EPA Regional Asbestos Coordinators' (RACs) Compliance Monitoring Reports prepared as of February 1984 included 80 LEAs that were in our selected sample. These reports were used as part of our QA program to verify questionnaire data. Since RAC reports were highly variable in information content and completeness, there were only four items that were included in all of the RAC reports and so the comparisons were based on these items. No significant differences were found when comparing the RAC reports to the questionnaire data for the four items.

SECTION 1
INTRODUCTION

BACKGROUND

The widespread use of asbestos over the years has caused concern about the risk of increased cancer and chronic respiratory disease among various segments of the population. Pulmonary cancer, mesothelioma, and fibrosis of the lung are known to be associated with exposure to asbestos in certain work places, such as where asbestos is mined and milled or where asbestos materials and products are manufactured or used (NCI 1978; Peto et al., 1982; Zivy, 1982). Currently there is considerable concern that asbestos-containing materials, used extensively in schools from 1945 to 1978 for fire-retarding purposes and acoustical or thermal insulation, are releasing asbestos fibers into the air of the buildings. The resultant exposure of the students, teachers, and other school employees to the airborne asbestos may result in asbestos-related diseases. A rule proposed by the U.S. Environmental Protection Agency (EPA) requiring the identification of friable* asbestos-containing materials in schools and the notification of those exposed to the materials was published in the Federal Register (45 FR 61966) in September 1980. The final rule was published May 27, 1982 in the Federal Register (47 FR 23360) and became effective June 28, 1982.

The EPA had been operating a voluntary Technical Assistance Program (TAP) since March 1979 preceding issuance of the Asbestos-In-Schools Identification and Notification Rule. The

---

*Friable materials are defined as any materials applied onto ceilings, walls, structural members, piping, ductwork, etc., which when dry may be crumbled, pulverized or reduced to powder by hand pressure.

TAP, which continues to exist, was designed to help school districts voluntarily identify and correct potential hazards due to the presence of asbestos-containing materials in schools. The EPA found it necessary to promulgate the Identification and Notification Rule, because information from the Regional Asbestos Coordinators indicated that a large percentage of U.S. schools had not been inspected or had been inadequately inspected under the voluntary program.

Under the Asbestos-In-Schools Identification and Notification Rule, local education agencies (which include public and private schools) were allowed 13 months to comply with all portions of the rule. The rule requires local education agencies to comply by June 28, 1983, and to:

1. Inspect all areas of each school building within the agency for friable materials applied to structural surfaces in the building;
2. Take at least three samples of each distinct type of friable material found or treat all friable materials as asbestos-containing;
3. Have those samples analyzed using polarized light microscopy (PLM) for their asbestos content;
4. Post notice of inspection results in schools where friable asbestos-containing materials were found using Form 7730-3,"Notice to School Employees" and inform all employees of the location of these materials;
5. Distribute Form 7730-2, "A Guide for Reducing Asbestos Exposure" to maintenance and custodial personnel;
6. Notify the parent-teacher groups or parents for schools found to contain friable asbestos-containing materials; and
7. Maintain records of the findings of all inspections and analyses at the local education agency and in all schools using Form 7730-1.

The rule does not require schools to take abatement action. However, when asbestos-containing materials are identified, schools may choose corrective action such as removal, encapsulation, enclosure, or an operations/maintenance plan.

Schools that had already inspected, sampled, and analyzed friable asbestos-containing material under the voluntary TAP only had to comply with the recordkeeping and notification provisions of the rule. Schools that contained no friable asbestos-containing materials had to certify these results and maintain the certification statement in their files. Schools that conducted abatement programs resulting in the elimination or containment of all friable asbestos materials, either by removal or encapsulation of the materials before June 28, 1983 were exempt from all the requirements of the rule.

The EPA conducted this telephone survey of LEAs to evaluate compliance with the Asbestos-In-Schools Identification and Notification Rule. For the purpose of this study, LEAs are defined in the following way. For public schools the local education agency was in most cases the school district. In some large cities, a central office reported for more than one school district and was designated the responding local education agency. For private non-Catholic schools, the local education agency was in most cases the school, although occasionally a respondent reported on more than one school under their control. For private Catholic schools, the local education agency was in most cases the school, although some dioceses reported for the schools under their jurisdictions. In these instances, dioceses were considered the local education agency.

SURVEY OBJECTIVES AND DESIGN

The survey was conducted with two overall objectives: (1) to determine how many local education agencies had complied with the rule by the end of the compliance period; and (2) to describe local education agencies' inspection methods, results, and abatement plans. To accomplish these objectives, the following information was collected:

- The number of schools that were inspected for friable materials;
- The date that the schools performed the inspection so that TAP inspections could be differentiated from rule compliance inspections;
- The number of schools with friable asbestos-containing friable materials present;
- The number of square feet of friable asbestos-containing materials present;
- The number of people (by subcategory, i.e., students, teachers, custodians) using buildings with friable asbestos-containing materials;
- The recordkeeping processes used;
- The processes used to notify employees and parents; and
- The number of square feet of asbestos-containing materials which had been abated or were scheduled for abatement in the future and the types of abatement used or planned.

The survey called for the collection of information from 1,800 public LEAs, 400 private Catholic, and 400 private non-Catholic schools. As a part of the survey design, eight metropolitan areas were selected as a quality assurance subsample and LEAs were visited to verify the information given during the telephone interview. In addition, some schools were inspected as part of the quality assurance plan.

The principal conclusions of the study are given in Section 2. The overall quality assurance program that was used is described in Section 3. The sample design that was the basis for the survey is described in Section 4. A discussion of the telephone survey operations is given in Section 5. A detailed accounting of the analyses that were performed and results obtained is given in Section 6.

SECTION 2

CONCLUSIONS

The principal conclusions from the study are presented below. They meet the objectives of the study which were to:

1. Determine the level and degree of compliance of the local Education Agencies (LEAs) with the EPA Asbestos-In-Schools Identification and Notification rule; and
2. Collect ancillary information on:
    - Potential exposures of school employees and students to asbestos-containing friable materials;
    - The amount of these materials present; and
    - Various abatement activities to contain and/or monitor these materials when present.

The major findings from this survey are the national estimates from the survey data. The numbers are statistically unbiased estimates based on a national probability sample and represent a census of the target universe of LEAs and schools. For some estimates, a distinction is made between sprayed- or trowelled-on ACFM and boiler/pipe ACFM. The reasons for the distinction include that direct access to boiler/pipe insulation is typically limited to custodial and maintenance personnel and it is difficult to provide accurate square footage estimates for pipe/boiler insulation materials. It must be noted that the transport of asbestos released from boiler/pipe insulation is possible and is therefore of concern to other building occupants.

The statistics in this report are estimates derived from a sample survey and, as such, are subject to errors of response and reporting as well as to sampling variability. For this reason intervals have been constructed with a prescribed confidence that they include the average result over all possible samples. Estimates of percentages presented in this section are followed by their 95 percent confidence intervals. Results are expressed in terms of LEAs and schools. The results apply to LEAs with at least one school built before January 1, 1979, since after that date materials containing more than one percent asbestos were no longer allowed in the construction of buildings. There are 32,946 LEAs, with at least one built before January 1979; 14,505 are public and 18,441 are private LEAs. There are 95,566 schools in these LEAs; 76,118 are public and 19,448 are private schools. Five categories of statistics are presented: inspection, abatement, compliance, exposure and quality assurance.

Inspection Results

- 83% ± 3% (27,422) of the LEAs have begun or completed inspections for friable materials; 94% ± 3% (13,673) of the public and 75% ± 5% (13,749) of the private LEAs.
- 31% ± 3% (8,565) of the LEAs that have begun or completed inspections used the EPA Technical Assistance Program (TAP) which consists of a toll-free number, regional technical advisors to assist LEAs and written guidelines for conducting inspections; 36% ± 3% (4,894) of the public and 27% ± 5% (3,671) of the private LEAs.
- 94% ± 3% (8,080) of the LEAs that used the TAP said it met their needs; 94% ± 3% (4,583) of the public and 95% ± 5% (3,497) of the private LEAs.
- 93% ± 5% (89,312) of schools have been inspected for friable materials; 98% ± 6% (74,607) of the public and 76% ± 8% (14,705) of the private schools.

- 40% ± 7% (11,031) of the LEAs that inspected found ACFM in one or more of their schools; 50% ± 5% (6,842) of the public and 30% ± 15% (4,189) of the private schools.
- 35% ± 3% (30,830) of inspected schools were found to contain ACFM; 35% ± 4% (26,137) of the public and 32% ± 7% (4,693) of the private schools.
- 45% ± 3% (4,971) of the LEAs that inspected and found ACFM in one or more schools, have asbestos materials limited to boiler/pipe insulation and not in sprayed- or trowelled-on material; 40% ± 4% (2,710) of the public and 54% ± 7% (2,261) of the private schools.

Abatement Programs

There are a total of 11,031 LEAs with at least one school that contains ACFM, 6,842 public and 4,189 private. There are 30,830 schools with ACFM; 26,137 public and 4,693 private.

- 67% ± 5% (20,598) of the schools with ACFM have some type of abatement work completed or in progress; 67% ± 6% (17,627) of the public and 63% ± 14% (2,972) of the private schools.
- 23% ± 5% (7,134) of the schools with ACFM are planning some type of abatement action; 23% ± 6% (6,014) of the public and 24% ± 13% (1,120) of the private schools.
- 29% ± 5% (3,193) of LEAs with ACFM are using removal as the sole method of abatement; 32% ± 4% (2,158) of the public and 25% ± 8% (1,035) of the private LEAs.
- 28% ± 4% (3,055) of LEAs with ACFM are using special operations and maintenance procedures and periodic reassessment as the sole method of abatement; 29% ± 4% (1,955) of the public and 25% ± 8% (1,060) of the private LEAs.
- The remaining LEAs are using more than one method of abatement.

- Following is a distribution of the schools with ACFM using each abatement method. These percentages add to more than 100% because some schools use more than one method.
  - Removal is used or will be used by 39% ± 5% (12,053) of the schools.
  - Enclosure is used or will be used by 15% ± 3% (4,560) of the schools.
  - Encapsulation is used or will be used by 40% ± 4% (12,408) of the schools.
  - Operations/maintenance is used by 41% ± 4% (12,733) of the schools.

Compliance Results

The following results present statistics on the number of LEAs complying with the broad aspects of the Asbestos-In-Schools Rule requirements. Because of the limits when administering a telephone interview, it was not possible to measure compliance with every provision of the rule. LEAs were required to
(1) inspect all school building for friable materials,
(2) sample all friable materials (at least three samples per homogeneous sampling area) unless all friable materials are declared in writing to contain asbestos, (3) analyze bulk samples using polarized light microscopy (PLM), (4) notify custodians, employees and parents if asbestos-containing friable materials are found in writing and post EPA form 7730-3 in certain areas of the school building, and (5) maintain records at LEAs and schools on Form 7730-1 and keep records where asbestos is located and copies of all notifications.

Following are the compliance results for LEAs with at least one school built before January 1, 1979. There are 32,946 such LEAs; 14,505 public and 18,441 private.

- 9% ± 2% (2,899) of the LEAs were in compliance with all aspects of the rule by June 28, 1983; 11% ± 2% (1,529) of the public and 7% ± 3% (1,370) of the private LEAs.
- 11% ± 2% (3,638) of the LEAS were in compliance with all aspects of the rule by January 1, 1984; 13% ± 2% (1,943) of the public and 9% ± 3% (1,695) of the private LEAs.

There were a number of LEAs that were not in strict compliance with the rule but did make an effort to comply. Frequent areas of violation were an insufficient number of bulk samples taken (less than 3) and the lack of use of the EPA forms. The LEAs in compliance with most aspects of the rule did (1) inspect all of their schools, (2) sample and analyze all friable materials, (3) notify employees and parents, and (4) keep some documentation on file. Statistics are presented as of June 28, 1983, the date required for compliance by the rule, and as of January 1, 1984, which shows the compliance status at the time of this survey. Following are the compliance results for these LEAs.

- 24% ± 2% (7,999) of the LEAs were in compliance with most aspects of the rule by June 28, 1983, 25% ± 2% (3,595) of the public and 24% ± 3% (4,405) of the private LEAs.
- 34% ± 2% (11,050) of the LEAs were in compliance with most aspects of the rule by January, 1984; 36% ± 3% (5,179) of the public and 32% ± 3% (5,871) of the private LEAs.

Following are the compliance results for LEAs with at least one school with ACFM. There are 11,031 such LEAs; 6,842 public and 4,189 private.

- 2% ± 2% (212) of the LEAs with ACFM were in compliance with all aspects of the rule by June 28, 1983; 2% ± 2% (122) of the public and 2% ± 2% (90) of the private LEAs.

- 4% ± 2% (437) of the LEAs with ACFM were in compliance with all aspects of the rule by January 1, 1984; 3% ± 2% (226) of the public and 5% ± 2% (211) of the private LEAs.

Following are the compliance results for the LEAs with at least one school with ACFM that attempted to comply with most aspects of the rule as defined above.

- 6% ± 2% (651) of the LEAs with ACFM were in compliance with most aspects of the rule by June 28, 1983; 5% ± 2% (368) of the public and 7% ± 2% (283) of the private LEAs.
- 21% ± 3% (2,348) of the LEAs with ACFM were in compliance with most aspects of the rule by January 1, 1984; 20% ± 4% (1,393) of the public and 23% ± 6% (955) of the private LEAs.

An analysis was conducted of the LEAs that did not comply with most aspects of the rule by January 1984. The purpose was to ascertain the effect each of the primary rule requirements (inspection, sampling, notification and documentation) had on the compliance statistics. There are 32,946 LEAs with at least one school built before January 1, 1979; 14,505 public and 18,441 private. The results of this analysis are as follows:

- 34% ± 2% (11,050) of the LEAs complied with most aspects of the rule; 36% ± 3% (5,179) of the public and 32% ± 3% (5,871) of the private LEAs.
- 19% ± 3% (6,405) of the LEAs failed to comply because they did not complete inspections of all of their schools; 10% ± 3% (1,497) of the public and 27% ± 5% (4,908) of the private LEAs.
- 20% ± 2% (6,738) of the LEAs failed to comply because they did not document inspection results; 16% ± 3% (2,325) of the public and 24% ± 5% (4,413) of the private LEAs.
- 3% ± 2% (902) of the LEAs failed to comply because they did not sample or analyze friable materials; 3% ± 2% (453) of the public and 2% ± 3% (449) of the private LEAs.

- 13% ± 3% (4,417) of the LEAs failed to comply with more than one aspect of the rule; 20% ± 3% (2,853) of the public and 8% ± 4% (1,564) of the private LEAs.

The same examination was made of LEAs with ACFM that failed to comply with most aspects of the rule by January 1984. There are 11,031 LEAs with ACFM; 6,842 public and 4,189 private. The findings for these LEAs are:

- 21% ± 3% (2,347) of the LEAs with ACFM complied with most aspects of the rule; 20% ± 4% (1,393) of the public and 23% ± 6% (955) of the private LEAs.
- 31% ± 5% (3,434) of the LEAs with ACFM failed to comply because they did not notify employees and/or parents of the presence of asbestos; 32% ± 5% (2,198) of the public and 30% ± 8% (1,236) of the private LEAs.
- 7% ± 2% (788) of the LEAs with ACFM failed to comply because they did not sample or analyze friable materials; 6% ± 2% (387) of the public and 10% ± 3% (401) of the private LEAs.
- 4% ± 2% (484) of the LEAs with ACFM failed to comply because they did not document the results of the inspections; 4% ± 2% (269) of the public and 6% ± 2% (254) of the private.
- 2% ± 2% (216) of the LEAs with ACFM, all of them public, failed to comply because they did not inspect all of their schools.
- 34% ± 5% (3,762) of the LEAs with ACFM failed to comply with more than one aspect of the rule; 35% ± 5% (2,379) of the public and 32% ± 8% (1,343) of the private LEAs.

These findings show that inspection and documentation were problem areas of significant noncompliance. For LEAs that found ACFM, failure to notify employees and/or parents was the most prominant reason for noncompliance.

Exposure to ACFM in Schools

- 35% ± 3% of inspected schools have ACFM; 34% ± 3% of all students are enrolled in these schools.
- 169,285,000 ± 25,600,000 square feet of sprayed or trowelled-on ACFM was reported to be in schools. This number does not include pipe or boiler insulation for which square footage is not available.
- 15,035,000 ± 1,514,000 students are in schools with ACFM:
  - 10,678,000 ± 1,075,000 in schools with at least some sprayed or trowelled-on ACFM; and
  - 4,357,000 ± 439,000 in schools with ACFM limited to pipe or boiler insulation.
- 1,386,000 ± 192,000 school employees are in schools with ACFM.

Quality Assurance

Quality Assurance (QA) site visits were made to eight metropolitan areas in which 38 LEAs were visited (17 public and 21 private) and 94 schools within these LEAs were inspected (73 public and 21 private). One superintendent refused to allow the monitor to visit, giving an overall LEA response rate of 97.4 percent. The purposes of the site visits were (1) to verify that the information collected during the telephone interviews corresponded to what was on file at the LEA and (2) to validate that the information reported by the LEA about the schools matched the situation at the schools.

The data collected during the site visits indicate that the survey results matched the records on file at the LEAs. Areas of disagreement could be accounted for and are not believed to have any significant influence on the statistics reported on herein. Shown below are the major findings from the site visits:

- Some LEAs and school officials are unable to respond to questions about inspections in a valid and reliable manner due to turnovers in personnel and the failure to maintain adequate records. Although this is a potential source of error, the site visit results show that such errors at times overestimated and at times underestimated the number of schools with ACFM and therefore do not imply a consistent bias in the national estimates.

- Some schools, due to inadequate inspections, did not report friable materials on pipes and boilers that were present. This may lead to an underestimate of the amount of friable material in schools nationally.

- Some schools were more likely to report at the site visit the presence of friable materials which had been enclosed or encapsulated. On the questionnaire, LEAs were requested to give the number of schools in which friable materials had been found regardless of whether those materials had been enclosed or encapsulated. This may lead to an underestimate of the amount of friable materials in schools nationwide.

- Some schools failed to report friable insulation on pipes and boilers because they did not understand inspection of boiler rooms was required by the rule. This will contribute to underestimating the amount of friable materials on pipes and boilers nationwide.

- On balance, we believe that our nationwide estimates of the presence of friable materials predominantly on pipes and boilers may be low. An estimated 89% of the schools in the survey with friable materials also have ACFM; therefore the number of schools with ACFM on pipes and boilers is also likely to be an underestimate.

- Most LEAs are instructing their schools with ACFM to notify employees and parents, but notifications are not being implemented by some schools.

- Some schools are reluctant to notify parents in schools with ACFM when friable materials are limited to pipe wrap in boiler rooms.

Examination of the EPA Compliance Monitoring Reports

The EPA Regional Asbestos Coordinators' (RACs) Compliance Monitoring Reports prepared as of February 1984 included 80 LEAs that were in our selected sample. These reports were used as part of our QA program to verify questionnaire data. Since RAC reports were highly variable in information content and completeness, there were only four items that were included in all of the RAC reports and so the comparisons were based on these items. No significant differences were found when comparing the RAC reports to the questionnaire data for the four items.

SECTION 3

QUALITY ASSURANCE PROGRAM

Quality assurance was an important consideration in the design and management of this study. It covered the organization and operation of all aspects of the work. The major components of the quality assurance program are summarized below.

SAMPLE SELECTION

The sampling list or frame used to select public school districts and private schools was purchased from Market Data Retrieval, Inc., a company which maintains current, regularly updated files. Totals of private and public school enrollments from the data file were aggregated and compared to totals provided by the National Center for Educational Statistics (NCES).

The frame was stratified by type of school district or school (public, private Catholic and private non-Catholic) then sorted by the LEAs' enrollments within state. Systematic samples for each type of school were selected with the probability of selecting any one school proportionate to the square root of enrollment. The computer programs written to construct the sample were carefully checked to assure accuracy. The sample was weighted by the inverse of the probability of selection and weighted up to provide national totals. These totals were compared to NCES statistics and to the totals from Market Data Retrieval, Inc. for comparability.

DATA COLLECTION

A questionnaire was developed based on Inspections for Friable Asbestos-Containing Materials (EPA form 7730-1). Project personnel from the EPA headquarters and regions provided advice on a regular basis during this time. The questionnaire was pretested on 10 public and private LEAs. A three-day training program was conducted to instruct experienced telephone interviewers about the questionnaire and the use of special survey procedures. During the first week of the survey, every interviewer was monitored. Thereafter 10 percent of all interviews were monitored. During the interview period computerized control systems were used to provide managers with information on survey progress, quality, schedule and cost.

RESPONSE RATES

An important aspect of the validity of survey data is the response or cooperation rate achieved. In a voluntary survey such as this one, one does not generally achieve full participation as some contacts exercise their right to refuse participation.

Nonresponse was minimized in this study through the recruitment of experienced telephone interviewers. An extensive effort to contact nonresponding LEAs was undertaken employing interviewers who demonstrated skill in achieving high response rates. At least three phone calls were made to responding LEAs that needed more time to gather all the required information. Due to these efforts an excellent overall response rate of 96.5 percent was achieved.

The total number of completed responses and the final response rates by type of LEA are as follows:

Type of school	Sample size	Number of responses	Proportion responses
Public	1,800	1,742	96.8%
Private Catholic	400	387	96.8
Private non-Catholic	400	379	94.8

Reasons for noncooperation are shown below. Overall, three percent refused to participate. Less than one percent of the schools had closed. In some places, one office provided information for more than one city school district which had been selected to be in the sample. Although we only completed one questionnaire for all such school districts, the other districts were considered completes since information was gathered about them. These schools are shown below as "Schools covered by another questionnaire." The final status of all LEAs was:

	Public school districts	Private non-Catholic	Private Catholic	Total
Refused to participate	48	17	13	78
Schools closed	1	15	0	16
Military schools on base (exempt)	1	1	0	2
No answer after 8 callbacks	9	3	0	12
Completed questionnaires	1,701	363	374	2,438
Schools covered by another questionnaire	40	1	13	54
	1,800	400	400	2,600

DATA VALIDATION AND PROCESSING

Data collected during the survey operations were manually edited, coded, keypunched and then computer edited to produce a clean data tape. Coders/editors were trained in a session which included a review of the code design and practice coding of scripted questionnaires. Each coder's first day's work was 100 percent verified and 10 percent of subsequent work was verified. As questionnaires were coded and verified they were sent to be keypunched into a form that could be read by a computer. All keypunching was 100 percent verified.

SITE VISITS TO LEAs

Eight metropolitan areas were purposefully selected to receive a site visit by a field investigator. The primary purpose of the visit was to verify that the information collected during the telephone interviews corresponded to that of the LEA. The field investigator was also to validate that the information reported by the LEA about the schools matched the situation at the schools. Three investigators were employed.

Selection of Cities, LEAs and Schools

The cities were selected to cover a wide range of geographic areas in the United States and as many EPA regions as possible. Each city had to (1) have schools with and without asbestos-containing friable materials and (2) have been adequately represented in the sample to assure the investigators a full work load.

Each investigator was given the names of at least two public school districts, two private Catholic schools and two private non-Catholic schools to visit. LEAs that had already been inspected by the EPA Compliance Monitors were excluded as were those that had refused to participate in the survey or had not inspected any of their schools. When possible, LEAs that had at least one school with ACFM were selected. Within the public school districts, a subsample of schools was to be chosen by the field investigators to be inspected.

The contact person at the LEA provided the QA Monitors with a list of the schools in their district built before January 1, 1979, marked to show which schools had ACFM and which had boilers. The complete instructions to QA monitors for selecting schools are included in Appendix D, QA Visit Field Manual, under Task 2. Monitors were instructed to start at the top of the list and select at least one school which met each of the following criteria, if available, listed in order of their importance:

1. A school reporting no ACFM but with a boiler.
2. A school reporting ACFM with a boiler.
3. A school reporting ACFM without a boiler.

Training of Field Investigators

A training session was held on February 22, 1984 to explain the purpose of the site visit, the requirements of the Asbestos-In-Schools rule, and to outline the series of events that should take place during a QA visit. A QA Visit Field Manual was prepared, a copy of which is included in Appendix D. The Field Manual provides a copy of the forms to be filled in at each site and an explanation of procedures to be followed during the visit. The three field investigators met in Kansas City on March 12, 1984. They accompanied the EPA Region VII Asbestos Coordinator on compliance monitoring inspections of two LEAs. The three investigators then completed inspections of one LEA and three of its schools, and two private schools in Kansas City. The Kansas City experience provided the investigators with valuable training in the inspection of schools for friable materials as well as alerting them to what forms they should expect to find on file at the LEA and at the schools. By inspecting the Kansas City sites together, the three investigators standardized their performance objectives so as to provide a uniformity of effort during the remaining site visits.

RESULTS OF SITE VISITS

In the 8 metropolitan areas, 17 public and 21 private LEAs were visited. One public LEA superintendent refused to allow the Monitor to visit, giving us an LEA response rate of 97.4 percent. No officials refused to allow inspections of schools and inspections were completed in 73 public and 21 private schools. Overall, the LEAs and schools cooperated fully with the field investigators, who had no problem obtaining access to school records or buildings. The major problem encountered with the site visits was the turnover in personnel and the failure of LEAs to maintain records about inspections. The new principal, superintendent, or maintenance custodian might be unfamiliar with the asbestos inspection program. The following sections detail the results of site visits to public and private LEAs and inspections of public and private schools.

Results of Site Visits to LEAs

The information collected during the site visits was in general agreement with that from the questionnaires and in almost complete agreement on seven of the eight key items. While the results of site visits to public LEAs showed discrepancies between records at the site and what was reported during the telephone interview, the differences were found almost exclusively in two LEAs. One LEA conducted 15 inspections after the telephone interview was made, but before the site visit. At the second LEA, the superintendent was new on the job and found two asbestos files after the telephone interview had been completed. These two LEAs accounted for 80 percent of the variation found in site visits. The LEAs were asked to describe the situation at their schools as it existed in January, 1984 at the time of the telephone interview. Table 1 shows the results of visits to public LEAs at the time of the site visit and at the time of the telephone interview. The results as of January, 1984 at the sites are comparable to what was obtained in the telephone interview for most items. Although the differences were not statistically significant, 7 out of 17 public LEAs reported a different number of schools in their school districts at the site visit than on the questionnaire. The only item that proved to be significantly different from zero was the number of schools with friable materials for public LEAs. On the telephone questionnaire, some LEAs did not report they had friable materials if such materials had been removed, enclosed, or encapsulated or if the friable materials were solely found in boiler rooms while LEAs were more likely to report these friable materials at the site visit. Private LEA results agreed very closely between site visits and questionnaires. However, more private LEAs said they found friable materials on the site visit than they did on the questionnaire. None of the differences found in private LEAs were statistically significant at the 95 percent confidence level.

Table 1. Results of site visits to LEAs

Item	Public LEA		Private LEA		Total	
	Site visit	Questionnaire	Site visit	Questionnaire	Site visit	Questionnaire
1. Number of schools in LEA	387	401	315	309	702	710
2. Number of students in LEA	226,883	236,743	116,248	116,186	343,131	352,929
3. Number of schools inspected	361	367	314	308	675	675
4. Number of schools with friable materials	*128	105	278	265	406	370
5. Number of schools with asbestos-containing friable materials	101	98	264	265	365	363
6. Number of LEAs with Form 7730-1 on file	8	9	7	7	15	16
7. Number of schools that notified employees in LEA	77	81	264	265	341	346
8. Number of LEAs that notified PTA	9	10	8	10	17	20

Number Public LEAs visited = 17
Number Private LEAs visited = 21

*Test on differences between site and questionnaire data are significantly different from zero at a 5 % level of significance.

Situation at LEA as of January, 1984

Inspection of Schools

The field investigators inspected 73 public and 21 private schools. Three public schools and one private school had not been inspected prior to the site visits. The investigators found friable materials that the schools missed during the LEAs' inspections in 25 out of the 90 schools (28%). Eleven of these 25 did report some friable materials as present but their reporting was incomplete; 14 of the 25 did not report any friable materials present. It is not known if the friable materials found during the site visits contain asbestos as these materials were not sampled or analyzed. Twenty of these 25 schools (80%) had friable materials which were limited to the boiler room. Table 2 shows the results of the school inspections.

Summary of Findings from Site Visits

The results obtained during the site visits to LEAs compare favorably to those obtained during the telephone interview for both public and private schools (when restricting the public school site visit data to the situation as it existed in January of 1984). The differences are small and seem to reflect a degree of uncertainty at the LEA. For instance, 6 of the 15 LEAs visited reported a different number of schools in their LEAs at the time of the site visit than the numbers given on the questionnaire. The most common reason for differences is the rapid turnover in personnel and the generally poor recordkeeping at the LEAs and more often at the schools. Although the sites selected to be visited were purposefully drawn, the LEAs visited in each site were urban and rural, large and small, and represented a variety of socio-economic groups. These LEAs are therefore felt to be generally representative of the population. The statistics gathered during the site visits compared favorably with the survey statistics reported on in this report.

Table 2. Results of site visits to and inspections of schools

Item	Public schools	Private schools	Total schools
1. Schools inspected by QA Monitor	73	21	94
2. Schools with friable materials	45	11	56
3. Schools with samples taken	37	9	46
4. Schools with lab reports on file	23	9	32
5. Schools with asbestos-containing friable materials	37	11	48
6. Schools that informed employees of ACFMs	22	11	33
7. Schools that posted Form 7730-3	18	11	29
8. Schools that notified parents	11	11	22
9. Schools with copies of notifications on file	9	9	18
10. Schools in which inspectors found friable materials that schools missed	21	4	25
11. Schools in which inspectors found friable materials in boiler rooms that schools missed	16	4	20

Sixty percent of public LEAs stated that they had informed employees and parents in schools with asbestos-containing friable materials. An inspection of a number of schools in each LEA revealed that some schools had informed employees and parents and some had not. The schools were more likely to inform their employees than to inform parents. In 8 of the 14 (57%) public LEAs that found asbestos-containing friable materials, the notification situation at the schools agreed with the information given on the questionnaire. In four LEAs (29%) the results were mixed; some schools had notified and some had not. Two public LEAs (14%) said at the site visit and on the questionnaire that employees and parents had been notified, but this proved not to be true according to the school officials. It appears that often LEAs are instructing their schools to notify employees and parents, but this is not being carried out by the schools.

Three LEAs said they had encapsulated, removed, or enclosed their friable materials and therefore did not have to inform parents under the provisions of the Rule. LEAs were particularly reluctant to inform parents when friable materials were found only in boiler rooms. In many schools, only the custodians are informed when asbestos is limited to boiler rooms.

In 25 out of 90 schools inspected by the field investigators, friable materials were found that the school officials had missed during their inspections. In these 25 schools, 14 said they had no friable materials prior to the field inspection and 11 said they found some friable materials. The friable materials found by the field investigators were limited to pipe wrap in boiler rooms in 20 out of the 25 schools. These findings would indicate that the number of schools found to contain friable materials in the telephone survey is an underestimate. From the data collected during the telephone survey, we have estimated that 89 percent of the schools with friable materials have asbestos-containing friable materials. Therefore, the estimated number of schools with ACFM and the estimate square footage of ACFM found in this survey are also likely to be low. It is not possible to indicate the magnitude of the underestimate from the site visit data as the schools inspected were not selected to be statistically representative of any larger population but rather were selected to maximize the probability of finding problem areas.

RESULTS OF COMPARISON OF COMPLIANCE MONITORING EFFORTS WITH QUESTIONNAIRES FOR SELECTED LEAs

The Environmental Protection Agency has established Regional Asbestos Coordinators (RACs) and inspectors in each of its ten regions to monitor compliance with the Asbestos-In-Schools rule. The inspector's responsibilities are to: (1) inspect public school districts, public schools, and private schools; (2) review records kept at LEAs and at schools; (3) ascertain if warnings and notifications to employees and parents have been properly made; and (4) determine if compliance with all Rule requirements has been achieved. The inspectors prepare an asbestos compliance inspection report on each LEA visited. The reports for LEAs that matched those included in the sample for this study were made available for comparison. There were 80 matching compliance reports; 66 for public school districts and 14 for private schools. The RAC reports were highly variable in information, content, and completeness. The RAC reports often did not contain the same information as did the questionnaires. For example, on many forms the RAC reports told the number of schools the inspectors had visited, rather than the total number of schools that had been inspected in the LEA. The latter was needed to be comparable to the questionnaire data. In addition, the RAC inspectors usually visited a subsample of schools in each LEA. The information given in the report referred to this subset of schools, rather than to all the schools in the LEA, the unit of analysis on the questionnaire. The four data items common to the inspection reports and the telephone survey on which the reports were compared are:

1. Number of schools in school district;
2. Number of schools inspected;
3. Number of schools with friable materials, and
4. Number of schools where friable materials were sampled.

Table 3 depicts the results of this analysis.

We are using the paired t-test as a tool to assess whether there are any important differences between the RAC reports and the questionnaire data. The RAC reports do not represent a random sample as RAC inspectors are more likely to visit LEAs they suspect are not in compliance with the rule. It can be hypothesized that larger differences would be found among these LEAs as they would theoretically be more likely to conceal their noncompliance during the telephone interview. Based on the results of the paired t-test, however, there is no evidence to suggest a significant difference between the RAC reports and the questionnaire data. The differences are approximately normally distributed, that is, they do not tend to go in only one direction. For example, the RAC reports do not consistently show more schools with friable materials than do the questionnaire data.

The paired t-test on the two comparisons showed that there were no significant differences between the data reported by the RAC investigators and the data collected during the telephone interviews. The test conducted at a five percent level of significance showed that the differences are not significantly different from zero for each of the four variables.

Table 3. Results of comparison of EPA compliance monitoring reports to LEA questionnaires

Item	Number of matching pairs	Compliance monitoring report	LEA questionnaire
1. Number of schools in LEA*	74	3,274	3,221
2. Number of schools inspected*	68	1,720	1,651
3. Number of schools with friable materials**	51	752	748
4. Number of schools with samples taken for analysis***	34	457	481

* $p > .20$
** $p > .60$
*** $p > .10$

Note: A small P-value (less than .05) indicates that the results are unusual and would cause us to reject the null hypothesis that the two samples are alike (within normal variability limits). With large P-values, such as those above, we can conclude that there is no statistically significant difference between the compliance monitoring reports and questionnaire results.

SECTION 4
SAMPLE DESIGN

This section outlines the sample design and selection of LEAs for this evaluation of the Asbestos-In-Schools Identification and Notification Rule.

CONSTRUCTION AND STRATIFICATION OF THE FRAME

The study population was defined as all public and private schools in the United States. The frame from which the sample was drawn consisted of a computer tape of public school districts and private Catholic and non-Catholic schools. The tape, provided by Market Data Retrieval, Inc. (MDR) was current and updated regularly. The MDR data file consists of 34,195 public and private local education agencies which represent 101,121 schools nationwide. Special schools, adult education or vocational technical schools were not included in the sample leaving 98,756 schools in the target universe to whom the survey results apply.

PROBABILITY SAMPLE DESIGN

The frame was stratified by type of school (public, private Catholic, private non-Catholic). It was then sorted by state and within state by enrollment. A systematic sample of school districts and private schools was selected proportionate to the square root of enrollment. Probability proportionate to size allocation is generally the most efficient system for aggregate statistics in which the large units contribute disproportionately to the aggregates; equal probability is generally the best scheme for estimates of proportions. Since this survey was concerned with both types of statistics, allocation proportionate to the square root of enrollment was a compromise between the two types of estimates resulting in substantially lower sampling errors for proportions and only moderate increases for aggregates.

SAMPLE SIZE SPECIFICATION

A sample of 1,800 public school districts was selected. For private schools, 400 private Catholic and 400 private non-Catholic schools were selected. The two private school samples were combined to produce the analysis tables.

PRECISION OF THE ESTIMATES

A variety of estimates are presented in this report providing measures for characteristics of interest. These include estimates of the percentages and totals of LEAs and schools with a particular characteristic of interest and total quantities such as total pupils and employees in schools with ACFM. It is important to keep in mind that these are survey estimates and as such are subject to errors which can be classified into two general categories: sampling error and nonsampling error.

A measurement of sampling error is an assessment of the precision of estimates obtained from a sample. An estimate from a sample will usually differ from the value derived from a complete census of the study population. Confidence intervals and standard errors (standard deviations of an estimate) are measures of the variability inherent in selecting a sample. If the sampling error is relatively small, the sample estimate is likely to be close to the population measure that would have been obtained through a census, assuming that the effect of nonsampling error on the estimates is minimal.

Nonsampling error refers to all other sources of error that might occur in a survey. These include mistakes in entering values on a questionnaire, misinterpretation of questions, undetected data entry errors and nonresponse. A census, as well as a sample, is subject to nonsampling errors. In general, nonsampling errors cannot be measured from the data collected in a survey. Nevertheless, for this survey efforts have been made to assess the possible magnitude of such errors through site visits to selected LEAs and a comparison of an independent data collection source (RAC reports) to the questionnaire data (see Section 2).

The desired degree of precision and the expected losses in the data collection process due to nonresponse were taken into account when determining the sample size for this survey. The precision, or sampling variance, is a function of the population variance, the sample design and the sample size. The influence of the sample design, called the design effect, was not a factor in this study because a systematic sample (which was used to select our sample) is analogous to simple random sampling in which there is no design effect. To estimate the sample size needed for this study, we calculated the confidence limits for some proportions as:

$$n = \frac{Pq}{E^2}$$

where E was the desired precision. It was concluded that the sample sizes specified above would be adequate to produce national total estimates within a precision of 5 percent at the 95 percent confidence level. This indicates that one can be 95 percent confident that the population percentage is within plus or minus 5.0 percent of the estimate.

SECTION 5

STATISTICAL ANALYSES OF TELEPHONE SURVEY DATA

After a clean edited data file was prepared, the file was weighted to produce estimates of national totals. The totals and percentages presented in this report are estimates and were calculated by multiplying the survey data collected by a sample weight and a nonresponse adjustment (described below).

WEIGHTING

The three samples -- public school districts, private Catholic, and private non-Catholic schools -- were weighted separately. The weight is the inverse of the probability of selection or the square root of enrollment divided by the sampling interval. A nonresponse adjustment was added to each sample file. Because the response rates were so high, overall 96.5 percent, the nonresponse adjustment had little effect on the estimated percentages. One nonresponse rate was created for public school districts, one for private non-Catholic schools, and one for private Catholic schools. The nonresponse rates were constructed using a ratio adjustment procedure to inflate the sample results to the total number of school districts and private schools in the universe file used to draw the sample.

Tabulations were produced using the Statistical Analysis System (SAS) package. Totals may be off by one and percentages by .1 due to rounding errors.

VARIANCE ESTIMATION

The survey of LEAs used a fairly simple sample design. There were three levels of stratification, the strata were sorted by state and enrollment, and the samples were selected with probability proportionate to the square root of enrollment. A ratio estimation procedure was utilized to adjust for nonresponse.

A balanced half-sample replication technique was used to compute variance estimates for this study. This method requires that the file be divided into strata of two sets of selected units each, and that within each stratum one set be assigned to group 1 and the other to group 2. Internal to the computer program used is an orthogonal matrix which designates (separately for each stratum) whether it is the group 1 unit or the group 2 unit that is included in the half sample for a particular replicate. To prepare the data file for variance estimation, LEAs were sorted in their order of selection and were grouped into pairs to define strata. Identical statistics were prepared for each replicate using the same weighting procedure for each replicate that was used in the survey itself. The variation of the estimates among the replicates provides a measure of the survey sampling errors for the statistics.

Variance estimates were computed for 33 totals within the following subgroups:

1. LEAs and schools that inspected for friable materials;
2. LEAs and schools that inspected and found friable materials; and
3. LEAs and schools that inspected, sampled, and found asbestos-containing friable materials.

Totals of varying magnitude were chosen so that standard errors were calculated for both common and rarer events. The coefficient of variation (CV) standardizes the standard deviation by expressing it as a percentage of the mean ($s/\bar{x}$). Since standard errors vary with different questions, the CVs can be compared to describe the relative amount of variation in the answers to each question. The resulting coefficients of variation for totals ranged from 1.5 percent for the number of public LEAs with an inspection program to 26.8 percent for the number of private schools with asbestos-containing friable materials that scheduled abatement work in the future.

As one would expect, estimates for small subpopulations tended to have higher coefficients of variation. Totals and their estimated standard errors, coefficients of variations, and upper and lower 95 percent confidence bounds follow in Table 4.

Also included are the estimated percentages along with their half-width 95 percent confidence interval. To interpret the plus or minus factor indicated in the table for an estimated percentage of LEAs or schools, the true value of the percentage with a particular characteristic is covered with 95 percent confidence by an interval centered at the estimated percentage and extended on either side of the estimate by the ± percentage shown.

RESULTS OF STATISTICAL ANALYSES

Characteristics of LEAs

The universe used for this survey was public school districts and private schools. School districts that included only vocational technical, special education, or adult education schools

Table 4. Coefficients of variation, standard errors, and confidence boundaries for selected totals

Item	Estimated total	Coefficient of variation	Standard errors variance (000's)	Confidence interval		Estimated percentage	Half-widt 95% confid interval o percentage
				lower	upper		
LEAs							
1. Total LEAs with inspection program	27,887	1.7	477	26,951	28,822	84.6	2.8
2. Public LEAS with inspection program	13,792	1.5	202	13,396	14,188	95.1	2.7
3. Private LEAs with inspection program	14,095	3.0	417	13,277	14,913	76.4	4.2
4. Total LEAs that completed inspections**	26,936	1.9	500	25,956	27,916	96.6	3.5
5. Public LEAs that completed inspections**	13,364	1.7	222	12,928	13,800	96.9	3.2
6. Private LEAs that completed inspections**	13,572	3.1	423	12,743	14,401	96.3	5.9
7. Total LEAs with friable materials	12,229	3,4	415	11,416	13,042	44.6	3.0
8. Public LEAs with friable materials	7,418	2.7	197	7,031	7,805	54.3	2.8
9. Private LEAs with friable materials	4,811	7.7	369	4,088	5,534	35.0	5.3
10.Total LEAS with ACFM*	11,031	3.8	424	10,200	11,862	90.2	6.8
11.Public LEAs with ACFM*	6,842	2.9	198	6,454	7,230	92.2	5.2
12.Private LEAs with ACFM*	4,189	8.9	373	3,458	4,919	87.1	15.2
SCHOOLS							
1. Total schools inspected	89,312	2.6	2,339	84,729	93,897	93.5	4.8
2. Public schools inspected	74,607	3.2	2,370	69,961	79,253	98.0	6.1
3. Private schools inspected	14,705	4.1	610	13,510	15,901	75.6	8.1
4. Total schools with friable materials	34,821	4.2	1,466	31,948	37,694	39.0	3.2
5. Public schools with friable materials	29,433	4.7	1,384	26,721	32,145	39.5	3.6
6. Private schools with friable materials	5,388	9.7	524	4,362	6,415	36.6	7.0
7. Total schools with ACFM*	30,830	4.4	1,346	28,191	33,469	34.5	3.0
8. Public schools with ACFM*	26,136	4.9	1,292	23,605	28,668	35.0	3.4
9. Private schools with ACFM*	4,693	10.5	491	3,731	5,656	31.9	6.5
10.Total schools with ACFM* that notified employees	24,394	5.6	1,366	21,716	27,072	79.1	8.7
11.Public schools with ACFM* that notified employees	20,820	6.2	1,283	18,306	23,334	79.7	9.6
12.Private schools with ACFM* that notified employees	3,574	12.3	440	2,713	4,436	76.2	18.4
13.Total schools with ACFM* that notified parents	23,067	6.8	1,559	20,012	26,123	74.8	9.9
14.Public schools with ACFM* that notified parents	19,482	7.6	1,471	16,599	22,366	74.6	11.0
15.Private schools with ACFM* that notified parents	3,585	12.0	431	2,741	4,429	76.4	18.0
16.Total schools with completed or ongoing abatement work	20,599	3.9	813	19,005	22,193	66.8	5.2
17.Public schools with completed or ongoing abatement work	17,627	4.5	797	16,065	19,189	67.4	6.0
18.Private schools with completed or ongoing abatement work	2,972	11.5	343	2,300	3,643	63.3	14.3
19.Total schools with abatement work scheduled	7,134	11.4	813	5,540	8,729	23.1	5.2
20.Public schools with abatement work scheduled	6,014	12.6	760	4,525	7,503	23.0	5.7
21.Private schools with abatement work scheduled	1,120	26.8	300	533	1,708	23.9	12.5

* Asbestos-containing friable material

**As of 1/1/84 for all LEAs

Table 4. Coefficients of variation, standard errors, and confidence boundaries for selected totals (continued)

Item	Estimated total	Coefficient of variation	Standard errors variance (000's)	Confidence interval		Estimated percentage	Half-width 95% confidence interval on percentage ±%
				lower	upper		
COMPLIANCE							
1. LEAs complying with all aspects by June, 1983	2,899	9.3	142	2,620	3,180	10.9	1.4
2. Public LEAs complying with all aspects by June, 1983	1,529	9.3	142	1,251	1,806	11.4	2.0
3. Private LEAs complying with all aspects by June, 1983	1,370	12.2	171	1,061	1,731	10.3	2.5
4. LEAS with ACFM complying with all aspects by June, 1983	212	28.9	61	92	332	2.0	1.1
5. Public LEAs with ACFM complying with all aspects by June, 1983	122	25.6	31	61	184	1.8	.9
6. Private LEAs with ACFM complying with all aspects by June, 1983	90	63.4	57	0	201	2.2	2.6

* Asbestos-containing friable material
**As of 1/1/84 for all LEAs

were not included. In some instances, a private school reported for more than one school. These private school LEAs were either dioceses reporting for more than one Catholic school under its jurisdiction or private non-Catholic school buildings that housed more than one school.

For this study, we are characterizing 34,195 LEAs; 14,593 are public school districts and 19,602 are private LEAs. By January 1, 1979 the spraying of materials containing more than one percent asbestos and the installation of asbestos-containing molded insulating material in school buildings had been forbidden by law. This study was restricted to LEAs with at least one school built before that date of which there are 32,946; 14,505 are public and 18,441 are private LEAs. There are 95,566 schools in these LEAs; 76,118 are public and 19,448 are private schools. Table 5 presents a summary of characteristics of LEAs.

There are an estimated 44,406,740 students enrolled nationwide; 39,295,701 students are enrolled in public schools and 5,111,039 in private schools. There were 32,946 LEAs with at least one school built prior to January 1, 1979; 14,505 (99%) are public and 18,441 (94%) are private LEAs. Of these LEAs 27,887 (85%) have an inspection program; 13,792 (95%) of the public and 14,095 (76%) of the private LEAs.

Characteristics of Inspection Programs

Of the LEAs that did not have an inspection program, 2,626 (52%) claimed exemption to the Asbestos-In-School Rule. Of the LEAs that claimed exemption, 2,167 (83%) were private schools. The main reason given for the exemption claim, shown in Table 6, was that the LEA could document that no asbestos-containing materials were used in the construction of their schools.

Table 5. Characteristics of public and private LEAs as of January, 1984

	Public	Percent	Private	Percent	Total	Percent
a. Number of LEAs	14,593	100.0	19,602	100.0	34,195	100.0
b. Number of LEAs with schools built before 1/1/79*	14,505	99.4	18,441	94.1	32,946	96.3
c. Number of LEAs that have completed, begun or planned an inspection program**	13,792	95.1	14,095	76.4	27,887	84.6
d. Number of LEAs that have completed or begun inspections***	13,673	94.3	13,749	74.6	27,422	83.2
e. Number of LEAs with one or more schools having asbestos-containing friable materials****	6,842	50.0	4,189	30.5	11,031	40.2

* % = b/a
** % = c/b
*** % = d/b
**** % = e/d

Table 6. For LEAs claiming exemption to rule, reason for exemption*

Reason	Private		Public		Total	
	Estimate	Percent	Estimate	Percent	Estimate	Percent
a. LEA was inspected, sampled and analyzed prior to the effective date of the rule	40	8.7	152	7.0	193	7.3
b. The LEA can document that no asbestos-containing building materials were used in construction	331	72.2	1,586	73.2	1,917	73.0
c. Abatement programs have resulted in elimination of all friable materials	35	7.6	52	2.4	86	3.3
No reason given	53	11.5	377	17.4	430	16.4
Total	459	100.0	2,167	100.0	2,626	100.0

*For LEAs with at least one school built before January 1, 1979 that have no inspection program.

Situation at LEA as of January, 1984

Most of the inspections (39%) were conducted by the school or school district. Private companies or consultants conducted 26 percent of all inspections. Some inspections were done by state or county agencies (19%) or with the assistance of the EPA compliance monitors (5%). Overall, 75 percent of all inspections had been completed by the end of the compliance period, June 28, 1983. As of the date of this survey, January, 1984, 98 percent of all inspections (for LEAs that have an inspection program) had been completed or begun. Of the LEAs with an inspection program, 464 (2%) have scheduled an inspection for the future. Of the planned inspections, 79 percent are scheduled to begin before July, 1984; the remaining 21 percent do not know when they will begin.

EPA has an ongoing Technical Assistance Program (TAP) for friable materials inspections that includes a toll-free number, regional technical advisors to assist schools, and written guidelines for schools. Table 7 shows that the TAP was used by 4,894 (36%) of the public LEAs and 3,671 (27%) of the private LEAs that have begun or completed inspections. Ninety-four percent of the public and 95 percent of the private LEAs that used the TAP reported that it met their needs. Table 8 shows a list of the documents provided under the TAP and the number and percent of LEAs that used each document for public and private LEAs.

All LEAs that completed inspections were required by the rule to maintain a copy of Form 7730-1, "Inspections for Friable Asbestos-Containing Materials" on file. Of the LEAs that had completed or begun inspections, 5,468 (40%) of the public and 3,352 (24%) of the private LEAs had Form 7730-1 on file. Table 9 shows the LEAs that have the form on file and the date they completed it. A small percentage (2%) of those who did not have Form 7730-1 on file did have on file Form 7710-29, "Asbestos Survey Report," the form that was used prior to June 1982. Of

Table 7. The use of the EPA Technical Assistance Program*

Item	Public		Private		Total	
	Estimate	Per-cent	Estimate	Per-cent	Estimate	Per-cent
LEAs using EPA Technical Assistance Program (TAP):						
LEAS that did not use TAP	8,269	64.2	9,005	73.3	17,275	68.8
LEAs that used TAP	4,894	35.8	3,671	26.7	8,565	31.2
TAP met needs	4,583	93.6	3,497	95.3	8,080	94.3
TAP did not meet needs	311	6.4	174	4.7	485	5.7

NOTE: TAP consists of a toll-free telephone number, regional technical advisors to assist schools, and written guidelines for schools.

*For LEAs with at least one school built before January 1, 1979, that have begun or completed inspections.

Situation at LEA as of January, 1984.

Table 8. Number of LEAs that had and used EPA guidance documents to conduct inspections*

Document	Private Schools		Public Schools		Total	
	Estimate	Per-cent	Estimate	Per-cent	Estimate	Per-cent
Total LEAs that have completed or begun inspections as of January 1, 1984	13,673	100.0	13,749	100.0	27,422	100.0
1. "Compliance Assistance Guidelines: Friable Asbestos-Containing Materials in Schools; Identification and Notification Rule	2,306	19.0	1,017	7.4	3,323	12.1
2. "Asbestos-Containing Materials in School Buildings: A Guidance Document, Part I" (Orange Book)	3,826	28.0	2,546	18.5	6,371	23.2
3. "Asbestos-Containing Materials in School Buildings: A Guidance Document, Part II" (Orange Book)	3,676	26.9	2,426	17.6	6,101	22.2
4. "Asbestos-Containing Materials In School Buildings: Guidance for Asbestos Analytical Programs" (Black Book)	891	6.5	394	2.9	1,285	4.7
5. "Guidance for Controlling Friable Asbestos-Containing Materials in Buildings" (Blue Book)	1,120	8.2	601	4.4	1,721	6.3
6. Other Document	889	6.5	1,091	7.9	1,980	7.2

* Percent of LEAs that have and used each document. Categories are not mutually exclusive.

Table 9. LEAs with and without Form 7730-1, "Inspections for Friable Asbestos-Containing Materials"

	Public		Private		Total	
Status of Form 7730-1	Estimate	Per-cent	Estimate	Per-cent	Estimate	Per-cent
Form 7730-1 not on file	8,205	60.0	10,397	75.6	18,602	67.8
Form 7730-1 on file	5,468	40.0	3,352	24.4	8,820	32.2
	13,673	100.0	13,749	100.0	27,422	100.0
For LEAS WITH Form 7730-1 on file						
Completed before 7/1/83	3,425	62.6	2,000	59.7	5,425	61.5
Completed after 7/1/83	1,237	22.6	845	25.2	2,082	23.6
Date not known	806	14.7	507	15.1	1,313	14.9
	5,468	100.0	3,352	100.0	8,820	100.0

*For LEAs with at least one school built before January 1, 1979 that have begun or completed inspections.

Situation at LEA as of January, 1984

those that had Form 7730-1 on file, 5,425 (62%) had completed the form before the end of the compliance period, June 28, 1983.

Compliance Results

Table 10 shows the LEAs that complied with all aspects of the rule by the end of June, 1983. An LEA was considered in compliance if it met the criteria listed in Table 11. LEAs were considered in compliance with most aspects of the rule if they met the criteria listed in Table 12.

For Table 13, each of the four major provisions of the rule was dropped one at a time from the analysis. The purpose was to highlight the major problem areas of noncompliance. For LEAs that completed inspections, a large number failed to comply with the notification and the documentation aspects of the rule. LEAs with at least one school with ACFM failed most often to comply with the notification aspects of the rule.

Inspection Results

The results of inspections detailed in this section apply to LEAs that have at least one school built before January 1, 1979 and that have completed or begun inspections. Table 14 shows the results of inspections for schools as of January 1, 1984. Inspections had been completed for 74,607 (98%) of the public schools and 14,705 (76%) of the private schools in the nation. Of the inspected schools, 29,433 (39%) of the public and 5,388 (37%) of the private were found to contain friable materials. In public and in private schools with friable materials, 30,830 (89%) of the schools were found to have asbestos-containing friable materials. Table 15 shows the

Table 10. LEAs that complied with the Asbestos-In-Schools Rule*

LEAs that complied	Public		Private		Total	
	Estimate	Per-cent	Estimate	Per-cent	Estimate	Per-cent
1. LEAs that complied with all aspects of the Rule* by June 28, 1983						
Complied	1,529	10.5	1,370	7.4	2,899	8.8
Did not comply	12,976	89.5	17,071	92.6	30,047	91.2
	14,505	100.0	18,441	100.0	32,946	100.0
2. LEAs that complied with most aspects of the Rule by January, 1984**						
Complied	5,179	35.7	5,872	31.8	11,050	33.6
Did not comply	9,326	64.3	12,569	68.2	21,896	66.4
	14,505	100.0	18,441	100.0	32,946	100.0
3. LEAs with asbestos-containing friable materials that have completed inspections that complied with most aspects of the Rule* by January, 1984**						
Complied	1,393	20.4	955	22.8	2,348	21.3
Did not comply	5,449	79.7	3,234	77.2	8,683	78.7
	6,842	100.0	4,189	100.0	11,031	100.0
4. LEAs that complied with most aspects of the Rule (except notification) by January, 1984***						
Complied	7,377	50.9	7,107	38.5	14,484	44.0
Did not comply	7,128	49.1	11,334	61.5	18,462	56.0
	14,505	100.0	18,441	100.0	32,946	100.0

* See Table 11.

** See Table 12.

*** 1. All schools in LEA built before January 1, 1979 were inspected.
2. LEAs have some documentation on file describing inspection results.
3. LEA took some samples of friable materials for analysis.

Table 11. Asbestos-In-Schools Rule requirements to be met by June 28, 1983*

1. Inspect all school buildings for friable materials.
2. Sample all friable materials (at least three samples per homogeneous sampling area) unless all friable materials are declared in writing to contain asbestos.
3. Analyze bulk samples using polarized light microscopy.
4. Notify custodians (using Form 7730-2), all employees (using Form 7730-3) and parents if asbestos is found.
5. Keep records at LEA on Form 7730-1. Schools must keep records on where asbestos is located and keep copies of all notifications.

Table 12. Compliance requirements for LEAs that met most aspects of the Rule*

1. Inspect all school buildings for friable materials.
2. Sample any friable materials.
3. Notify employees and parents if asbestos is found.
4. Keep records at the LEA.

---

*For LEAs with at least one school built before January 1, 1979 that have completed inspections

Situation at LEA as of January 1984.

Table 13. Areas of noncompliance with most aspects of the Asbestos-In-Schools Rule by January, 1984

	Public LEAs		Private LEAs		Total LEAs	
	Estimate	Percent	Estimate	Percent	Estimate	Percent
Total LEAs with at least one school built before January, 1979	14,505	100.0	18,441	100.0	32,946	100.0
LEAs that complied with most aspects of the rule	5,179	35.7	5,871	31.8	11,050	33.5
LEAs that did not complete inspections	1,497	10.3	4,908	26.6	6,405	19.4
LEAs that inspected, sampled and documented, but did not notify employees and/or parents	2,198	15.2	1,236	6.7	3,434	10.4
LEAs that inspected, documented and notified, but did not sample and analyze	453	3.1	449	2.4	902	2.7
LEAs that inspected, sampled, notified, but did not document	2,325	16.0	4,413	23.9	6,738	20.5
LEAs that did not comply with more than one aspect of the rule	2,853	19.7	1,564	8.5	4,417	13.4
Total LEAs with at least one school with ACFM	6,842	100.0	4,189	100.0	11,031	100.0
LEAs with ACFM that complied with most aspects of the rule	1,393	20.4	955	22.8	2,347	21.3
LEAs with ACFM that did not inspect all their schools	216	3.2	-	-	216	2.0
LEAs with ACFM that inspected, sampled and documented, but did not notify employees and/or parents	2,198	32.1	1,236	29.5	3,434	31.1
LEAs with ACFM that inspected, documented and notified, but did not sample	387	5.7	401	9.6	788	7.1
LEAs with ACFM that inspected, sampled, notified, but did not document	269	3.9	254	6.1	484	4.4
LEAs with ACFM that did not comply with more than one aspect of the rule	2,379	34.8	1,343	32.1	3,762	34.1

Table 14. Results of inspections in schools as of January, 1984

Item	Public schools		Private schools		Total	
	Estimate	Percent	Estimate	Percent	Estimate	Percent
a. Number of schools built before January 1, 1979	76,118	100.0	19,448	100.0	95,566	100.0
b. Number of schools inspected	74,607	98.0	14,705	75.6	89,312	93.5
c. Number of schools with friable materials**	29,433	39.5	5,388	36.6	34,821	39.0
d. Number of schools with samples analyzed for asbestos*** *	24,379	32.6	4,259	29.0	28,638	32.1
e. Number of schools with asbestos-containing friable materials****	26,136	35.0	4,693	31.9	30,830	34.5
f. Number of schools with abatement work completed or begun*****	17,627	67.4	2,972	63.3	20,598	66.8

* Some LEAs treated all friable materials as asbestos-containing and did not sample.

** % = c/b

*** % = a/b

**** % = e/b

***** % = f/e

Table 15. Total square footage, employees and students in schools with asbestos-containing friable materials and total square footage by abatement work completed[a]

Item	Public		Private		Total
	Estimate	% of Total	Estimate	% of Total	
1. Total area in square feet of all friable asbestos-containing materials.	153,547,168	90.7	15,738,086	9.3	169,285,254
2. Total number of school employees who regularly work in schools where asbestos-containing friable materials were found.**	1,237,970	89.3	147,746	10.7	1,385,716
3. Total number of teachers, administrators and other professional staff in schools where asbestos-containing friable materials were found.	804,646	88.2	107,989	11.8	912,635
4. Total number of custodians in schools where asbestos-containing friable materials were found.	96,162	87.5	13,734	12.5	109,896
5. Total number of other non-professional and support staff in schools where asbestos-containing friable materials were found.	222,568	90.7	22,819	9.3	245,387
6. Total number of students enrolled in schools where asbestos-containing friable materials were found.	13,401,796	89.1	1,632,778	10.9	15,034,574
7. Total number of square feet that have been removed.	28,819,874	95.1	1,484,887	4.9	30,304,761
8. Total number of square feet that have been enclosed.	5,144,349	87.9	705,221	12.1	5,849,570
9. Total number of square feet that have been encapsulated.	41,037,348	94.0	2,597,107	6.0	43,634,455
10. Total number of square feet being monitored by an operations/maintenance/reassessment program.	14,510,668	96.2	568,638	3.8	15,079,306

[a] For LEAs with at least one school built before January 1, 1979, that have begun or completed inspections.

Situation at LEA as of January, 1984

*Does not include pipe wrap and not adjusted for item nonresponse.

**Some LEAs reported "total" but did not break figures down by category; hence (3, 4 and 5) do not total to (2).

total square footage, employees and students in schools with asbestos-containing friable materials.

There is a total of 169,285,254 square feet of asbestos-containing friable materials in schools. This figure does not include pipe wrap as it is difficult for LEAs to provide accurate estimates for pipe/boiler insulation. In addition, a small percentage of LEAs (8%) did not know the square footage of ACFM in their schools. No adjustment was made for these nonresponding LEAs. Of the square footage reported in schools, 18 percent (30,304,761) had been removed, 3 percent (5,849,570) had been enclosed in an air-tight barrier, and 26 percent (43,634,455) had been encapsulated using a sealant. Special operations and maintenance procedures and periodic reassessment are being conducted on nine percent (15,079,306) of the square footage with ACFM.

There are 15,034,574 students and 1,385,716 employees in schools where ACFM has been found. Of all public schools inspected, 35 percent have asbestos-containing friable materials, and 34 percent of all students are enrolled in public schools where asbestos-containing friable materials were found. Among private schools, 32 percent have asbestos-containing friable materials and 32 percent of all students are enrolled in such schools. Overall, 4,971 (45%) of the LEAs reported that the friable materials found were limited to pipe wrap in boiler rooms; 2,710 (40%) of the public and 2,261 (54%) of the private LEAs. Direct access to boiler/pipe insulation is usually limited to custodial and maintenance personnel. However, asbestos fibers released from insulation can be transported to other areas of a school and is therefore of concern. Table 16 shows the percent of asbestos-containing friable materials found in pipe wrap at LEAs. Of the LEAs with ACFM, 7,869 (71%) reported finding some in pipe wrap.

Table 16. Percent of asbestos-containing friable materials in pipe wrap in LEAs*

Percent pipe wrap	Public LEA		Private LEA		Total	
	Estimate	Percent	Estimate	Percent	Estimate	Percent
0 (No ACFM found in pipe wrap)	1,939	28.4	1,222	29.2	3,162	28.7
1-24	1,373	20.1	433	10.3	1,806	16.4
25-49	218	3.2	21	0.5	238	2.2
50-74	251	3.7	41	1.0	292	2.6
75-99	274	4.0	161	3.9	435	3.9
100 (All ACFM found in pipe wrap)	2,710	39.6	2,261	54.0	4,971	45.1
Not specified	78	1.1	50	1.2	127	1.2
Total	6,842	100.00	4,189	100.00	11,031	100.00

*For LEAs with at least one school built before January 1, 1979, that inspected and found asbestos-containing friable materials in one or more schools.

Situation at LEA as of January 1984.

Date of Construction

Table 17 shows the number of schools by decade that were found to have asbestos-containing friable materials. It also shows the percentage of all schools built during each decade that have asbestos-containing friable materials. The table shows the use of asbestos-containing materials dropped considerably from 1969-1978. The use of asbestos-containing materials in schools from 1899-1968 remained fairly constant by decade.

Sampling and Analysis Information

There were 10,261 LEAs that sampled friable materials and sent them to be analyzed; 6,490 of the public and 3,772 of the private LEAs. Public LEAs reported that, on the average, 2,231 (34%) took fewer than the required three samples of friable materials from each homogeneous sampling area. Similarly, private LEAs reported that 1,367 (36%) took fewer than three samples per sampling area. Complete test results were received from samples of friable materials by the end of the compliance period, June 28, 1983 for 4,580 (71%) of the public and 2,701 (72%) of the private LEAs.

Table 17. Schools where ACFM were found, by construction date*

Period of Construction	Public schools		Private schools		All schools	
	Estimate	Percent**	Estimate	Percent**	Estimate	Percent**
1969-1978	1,472	13.5	126	3.7	1,598	11.1
1959-1968	6,073	34.3	1,368	28.3	7,441	33.0
1949-1958	7,072	37.8	1,337	30.1	8,409	36.3
1939-1948	1,627	32.2	429	33.1	2,055	32.4
1929-1938	2,132	32.6	302	31.6	2,434	32.5
1919-1928	2,453	36.1	349	20.2	2,802	32.8
1909-1918	1,198	35.2	331	34.3	1,529	35.0
1899-1908	556	39.4	132	19.6	688	33.0
Before 1899	348	37.1	311	31.2	659	34.1

*For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found for which the date of construction was known.

Situation at LEA as of January, 1984.

**The percents in this table are the estimated schools with ACFM in decade divided by the estimate of the total number of schools built during the same decade (see Table 2 in Appendix A).

Notification to Employees and Parents

The following results apply to schools built before January 1, 1979 and that have completed inspections and that were found to have asbestos-containing friable materials. There are 11,031 LEAs with at least one school with ACFM; 6,842 of the public and 4,189 of the private. There are 30,830 schools with ACFM; 26,127 of the public and 4,693 of the private. Table 18 shows the number of schools that complied with the requirement to notify school employees. In public schools, 20,820 (80%) notified their school employees. In private schools, 3,574 (76%) notified school employees. Of the LEAs that notified school employees, 2,519 (46%) public and 1,275 (39%) private used EPA Form 7730-3, "Notice to School Employees." By the end of the compliance period, June 28, 1983, 16,724 (69%) of the schools had at least begun to notify school employees in their schools with ACFM.

Table 19 shows the results of notifications to PTAs or PTA equivalents for public and private schools. Public schools reported to have informed parents in 19,482 (75%) of their schools, while private schools informed 3,586 (76%) of their students' parents. Fifty-two percent (4,196 out of 8,088) of LEAs that informed parents had begun to notify them before the end of the compliance period.

Abatement Work in Schools with ACFM

The rule does not require schools to take abatement action. However, when asbestos-containing friable materials are identified, schools may choose to undertake corrective action. There are four basic types of abatement: (1) removal of all friable material containing asbestos; (2) enclosure of the material with

Table 18. Compliance with employee notification requirements for LEAs that found asbestos-containing friable materials*

Item	Public		Private		Total	
	Estimate	Percent	Estimate	Percent	Estimate	Percent
Schools with asbestos-containing friable materials						
Schools notified employees	20,820	79.7	3,574	76.2	24,394	79.1
Schools did not notify employees	5,316	20.3	1,119	23.8	6,436	20.9
Total	26,136	100.0	4,693	100.0	30,830	100.0
Schools that notified employees						
Date 1st notice provided to a school in the LEA						
Before 7/1/83	14,600	70.1	2,124	59.5	16,724	68.6
After 7/1/83	5,319	25.6	1,100	30.7	6,429	26.3
Date not known	901	4.3	350	9.8	1,251	5.1
Total	20,820	100.0	3,574	100.0	24,394	100.0
LEAs with at least one school with ACFM						
LEAs that notified employees	5,529	80.8	3,242	77.4	8,771	79.5
LEAs that did not notify	1,313	19.2	947	22.6	2,260	20.5
Total	6,842	100.0	4,189	100.0	11,031	100.0
LEAs that notified employees						
Method used to inform						
Used Form 7730-3	2,519	45.6	1,275	39.3	3,794	43.2
Notice posted/official letter	1,239	22.4	515	15.9	1,755	20.0
Staff meeting	933	16.9	1,169	36.0	2,102	24.0
Other	836	15.1	284	8.8	1,120	12.8
Total	5,529	100.0	3,242	100.0	8,771	100.0

*For LEAs with at least one school built before January 1, 1979, that inspected and found asbestos-containing friable materials in one or more schools.

Situation at LEA as of January 1984.

Table 19. Schools that provided notice to parents and date first notice made from LEA with asbestos-containing friable materials*

Item	Public		Private		Total	
	Estimate	Percent	Estimate	Percent	Estimate	Percent
Schools with asbestos-containing friable materials						
School did not notify parents	6,654	25.5	1,108	23.6	7,763	25.2
School notified parents	19,482	74.5	3,586	76.4	23,067	74.8
Total	23,136	100.0	4,693	100.0	30,830	100.0
Date first notice made from LEA						
Before 7/1/83	2,701	55.9	1,495	46.0	4,196	51.9
After 7/1/83	1,549	32.0	1,435	44.1	2,984	36.9
Date not known	585	12.1	323	9.9	908	11.2
Total LEAs that notified parents	4,835	100.0	3,253	100.0	8,088	100.0

*For LEAs with at least one school built before January 1, 1979, that inspected and found asbestos-containing friable materials in one or more school.

Situation at LEA as of January, 1984

an air-tight, impact resistant barrier; (3) encapsulation of the friable material by the use of a sealant; and (4) special operations and maintenance procedures and periodic reassessment which can be used to monitor the building for needed abatement activities at a future time. It should be noted that the results presented here do not distinguish between abatement for spray-applied ceiling, wall and structural steel coatings and pipe/ boiler/hot water tank insulation. The following survey results apply only to LEAs and schools in which some asbestos-containing friable materials were found and reflect the status of the LEA or school as of January, 1984.

Abatement work has been completed in 11,436 (44%) of the public schools and in 2,050 (44%) of the private schools with ACFM. Abatement work is currently ongoing in 6,191 (24%) of the public schools and in 922 (20%) of the private schools. In public schools, 6,014 (23%) are planning abatement for the future as are 1,120 (24%) of the private schools. Nine percent of the public schools and 12 percent of the private schools have no abatement plans. Table 20 shows the status of abatement work in schools by the method of abatement. Public schools have encapsulated in 8,335 (78%) of the schools and enclosed friable materials in 2,216 (62%) of the schools. Costs are given for removal, encapsulation and enclosure work that has been completed. It should be noted that an effective enclosure or encapsulation effort must also include an operations maintenance and periodic reassessment (O/M/R) program for the remainder of the time the asbestos-containing friable materials stay in the building. O/M/R costs are not readily quantifiable but are incurred for maintenance repairs, frequent visual inspections, and annual re-evaluations. These costs are not included in the data presented in Table 21. The actual costs of future abatement per square foot may increase greatly from those shown in Table 21 depending on the size of the project, the field conditions, the

Table 20. Number of schools doing abatement, by type of abatement and status of abatement work*

Status of abatement work in schools	Type of abatement							
	Removal		Enclosure		Encapsulation		Monitoring	
	Estimate	Per-cent	Estimate	Per-cent	Estimate	Per-cent	Estimate	Per-cent
Public Schools								
Completed	6,064	58.8	2,216	61.6	8,335	78.3	2,545	22.4
Ongoing	486	4.7	564	15.7	618	5.8	6,461	56.8
Planned	3,772	36.5	818	22.7	1,698	15.9	2,370	20.8
Total	10,323	100.0	3,598	100.0	10,651	100.0	11,377	100.0
Private Schools								
Completed	1,050	60.7	774	80.4	1,343	76.5	255	18.8
Ongoing	116	6.7	49	5.1	107	6.1	819	60.4
Planned	565	32.6	139	14.5	306	17.4	282	20.8
Total	1,730	100.0	962	100.0	1,757	100.0	1,356	100.0

Note: Categories are not mutually exclusive.
A school may be doing more than one type of abatement work.

*For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found and which use some method of abatement.

Situation at LEA as of January, 1984

necessary reconstruction items, the stringency of the specified work practices, and the acceptable quality assurance. The cost estimates presented in Table 21 are based on small numbers of respondents and are therefore subject to large sampling errors.

Table 22 shows the average number of square feet abated which has been completed in schools. Most asbestos-containing friable materials have been maintained and periodically reassessed (9,780 square feet per school in public and 3,869 square feet per school in private schools on the average). More friable materials have been encapsulated (an average 7,341 square feet in public and 3,291 square feet in private schools) than were removed. On the average, 4,823 square feet in public and 1,515 square feet in private schools have been enclosed.

Nationwide an estimated 30,304,761 square feet of ACFM have been removed from schools, 43,634,455 square feet of ACFM have been encapsulated using a sealant and 5,849,570 square feet of ACFM have been enclosed in an air-tight impact resistant barrier.

Table 21. Average cost per square foot of abatement in schools in which work has been completed[1, 2, 3]

Type of abatement	Average cost		
	Public schools	Private schools	Total schools
Removal	3.37	3.06	3.34
Enclosure	2.84	6.12	3.99
Encapsulation	2.42	4.84	2.65

Table 22. Average square feet in schools by method of abatement for schools that have completed work[1]

Type of abatement	Average square feet abated		
	Public schools	Private schools	Total schools
Removal	6,908	2,400	6,338
Enclosure	4,823	1,515	3,958
Encapsulation	7,341	3,291	6,853
Operations/maintenance/ reassessment	9,780	3,869	9,293

[1] For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found and which use some method of abatement.

[2] These estimates are based on reports from a small number of of respondents and are therefore subject to large sampling error.

[3] Actual cost of future abatement per square foot may increase greatly depending on size of project, field conditions, necessary reconstruction items, stringency of specified work practices and level of acceptable quality assurance.

Situation at LEA as of January 1984.

SECTION 6
METHODOLOGICAL REPORT

OVERVIEW OF SURVEY

The evaluation of the Asbestos-In-Schools Identification and Notification Rule was designed to gather information through a telephone interview. Completed questionnaires were weighted and aggregated to provide national estimates for the universe of public school districts and private schools that were subject to the rule.

The questionnaire requested basic information about the schools such as number of students and number of employees. In addition, questions were asked about the inspection activities of the schools. When friable materials were found, the sampling activities were explored. Schools were required to describe the results of the analysis and their current and planned abatement work.

The sample design was a stratified systematic sample with probability proportionate to the square root of school enrollment. Samples of 1,800 public school districts, 400 private non-Catholic and 400 Catholic schools were selected.

Approximately two weeks before the questionnaire was to be administered by telephone, a letter from the Office of Toxic Substances and a questionnaire were mailed to each superintendent or school principal in the sample. Copies of the letter and the questionnaire are included in Appendix B. Also enclosed in the package was a card to be returned with the name of the person responsible for the asbestos inspections.

The total number of completed responses, along with the final response rates are summarized in Table 23. The overall response rate for the survey was 96.5 percent.

Each completed response was weighted to provide estimated totals of interest such as the number and percent of schools with asbestos-containing friable materials.

This section includes sections on questionnaire development, data collection, data processing.

Table 23. Response rates for Asbestos-In-Schools telephone survey

Type of school	Sample size	Number of responses	Proportion responses
Public	1,800	1,742	96.8%
Private Catholic	400	387	96.8%
Private non-Catholic	400	379	94.8%

THE QUESTIONNAIRE

A questionnaire based on "Inspections for Friable Asbestos-Containing Materials" (EPA form 7730-1) was developed for use in telephone interviews.

The questionnaire development followed the following steps:

1. Outline all issues to be addressed;
2. Review outline with EPA staff and obtain agreement;
3. Translate each item in the outline into a question and determine the response mode;

4. Determine "best wording" for each question;
5. Arrange/order questions for ease of communication with respondents and efficient use by interviewers and coders; and
6. Format questionnaire for efficient editing, coding, and keypunching.

The questionnaire, after review by the EPA staff, was submitted to OMB for clearance, and was received in October, 1983. A pretest of the questionnaire was conducted November 14-16. Composing and printing took place during early December, and the first mailout of the questionnaire took place in mid-December, 1983.

PRETEST

A pretest of the questionnaire was conducted on November 14 through 16, 1983. The pretest was to ensure that (1) there were no conflicts in the instructions to the interviewers, and (2) the questions were understood by the respondents. Ten interviews were completed in seven public school districts and three private schools. Each of the sampled schools/districts was sent (1) a letter one week before the telephone call explaining the purpose of the study, and (2) a copy of the questionnaire to be completed in advance of the telephone interview.

Interviewers had no problems reaching the person responsible for the asbestos inspections. Seven of the ten respondents had filled in the questionnaire prior to the phone call which substantially reduced the amount of time required to complete the interview. No problems were encountered with wording or meaning of any of the questions. Except for minor modifications to correct skip patterns or typing errors, the questionnaire was not changed following the pretest.

INTERVIEWER TRAINING

A training program was conducted December 12 through December 13, 1983 to provide interviewers with an in-depth understanding of the EPA questionnaire and all special procedures to be used during the survey. Special attention was paid to providing trainees with the information they needed to adequately answer any questions a respondent might have had about why or how the survey was being conducted.

SURVEY RESPONSE AND FOLLOW-UP PROCEDURES

Nonresponse on this survey was minimized by the recruitment of experienced telephone interviewers and careful training for this study. An extensive effort to contact nonrespondents was undertaken, employing interviewers who have demonstrated skill in achieving high response rates.

Table 24 shows the final status of all sample schools/districts. Overall three percent refused to participate. Less than one percent of the schools had closed. In some places, one office provided all the information for more than one city school district, all of which had been selected to be in the sample. Although we only completed one questionnaire for all the city school districts, the other districts were considered as completed questionnaires as well since information was gathered about them. These schools are shown in Table 24 as "Schools covered by another questionnaire."

Table 24. Final status of telephone interviews for Asbestos-In-School Survey

	Public school districts	Private non-Catholic	Private Catholic	Total
Refused to participate	48	17	13	78
Schools closed	1	15	0	16
Military schools on base (exempt)	1	1	0	2
No answer after 8 callbacks	9	3	0	12
Completed questionnaires	1,701	363	374	2,438
Schools covered by another questionnaire	40	1	13	54
	1,800	400	400	2,600

TELEPHONE QUALITY CONTROL AND DATA RETRIEVAL

After completing each interview, the interviewers reviewed everything they recorded for editing. In addition to this editing process, the receipt control staff scanned all work to make sure it was properly coded. If an error or inconsistency was found during the scan, the questionnaire was returned to the interviewer and the school or district was called to resolve the problem. Callbacks to LEAs were also done by the coding staff during the coding/editing phase of data collection.

DATA PROCESSING

As the questionnaires were completed, they passed through several stages of data processing. The first step was scan-editing. The questionnaires were given a preliminary check to make sure that skip patterns were followed and that the responses were logical and complete. Any questionnaires with missing or inconsistent data were brought to the attention of the Coding Supervisor, and these respondents were called for additional clarifying information.

When a questionnaire was found to satisfy these initial qualifications, it was then coded in preparation for keypunching. Most items on the questionnaire were precoded and codes were directly noted on the questionnaire. Responses to several "Other (Specify)" categories were analyzed and grouped. Some recoding was done to retain the most frequent responses.

After the coding and checking was completed, the responses were keypunched and 100 percent key-verified. Each batch of questionnaires was subjected to machine-editing designed to uncover coding errors and errors in logic. Each error was checked against the questionnaire and corrected. Machine-editing was continued until a clean data set was produced which was used to produce the statistical analysis tables. Weights were applied to the file and tabulations produced according to the specifications presented in the Analysis Plan.

The clean data tape and a copy of the machine-edit coding manual were provided to the EPA.

APPENDIX A

STATISTICAL TABULATIONS

Titles

Table	
1	Local Education Agencies by type of agency
2	Schools by date of construction
3	Current student enrollment
4	LEAs with some schools built before January 1, 1979
5	LEAs that have an inspection program
6	Type of agent inspecting at LEAs with inspection programs
7	Starting date of inspections
8	Completion status of inspections as of January 1, 1984
9	Date inspections completed in LEA
10	Scheduled inspection date in LEAs planning inspections
11	Date inspections begun in LEAs initiating inspections
12	Use of EPA's Technical Assistance Program by LEA
13	How well TAP met needs of LEA
14	EPA Documents at LEA using the Technical Assistance Program
15	LEAs with Form 7730-1 on file
16	Date Form 7730-1 completed for LEAs with Form 7730-1 on file
17	Source of information used to answer questionnaire
18	Number of schools inspected for friable materials
19	Number of LEAs in which friable materials were found

Titles (continued)

Table	
20	Number of inspected schools with friable materials
21	Number of schools in which samples were analyzed
22	Number of LEAs with one or more schools having asbestos
23	Number of inspected schools finding asbestos
24	Average number of square feet of asbestos-containing friable materials per school
25	Number of employees in LEAs where asbestos-containing friable materials were found
26	Number of teachers/custodian/other staff in LEAs where asbestos-containing friable materials were found
27	Distribution of LEAs by number of students exposed to asbestos-containing friable materials
27A	Distribution of inspected LEAs by enrollment
28	Average samples per area analyzed for asbestos
29	First date samples taken at LEAs analyzing friable materials
30	Last date samples taken in LEAs analyzing friable materials
31	First date friable material samples sent for analysis
32	Last date friable material samples sent for analysis
33	First date test results received from friable samples
34	Last date test results received from friable samples
35	Schools where asbestos-containing friable materials were found by date of construction
36	Number of schools which provided notice to employees

Titles (continued)

Table

37 Method used by LEA to notify employees
38 First date notice provided to employees in LEA
39 Number of schools providing notice to parents and/or PTA
40 Method used by LEA to notify PTA
41 Date first notice made to any PTA from the LEA
42 Method used by LEA to notify PTA equivalent
43 First date LEA notified any PTA equivalent
44 Number of schools with abatement completed, ongoing or planned
45 Status of removal work in schools using this method
46 Average square feet of asbestos-containing friable materials in schools using removal abatement
47 Average cost per square foot to remove asbestos-containing friable materials
48 Intended start of removal in LEAs planning removal
49 Schools using enclosure abatement by status of the work
50 Average square feet of asbestos-containing friable materials in schools using enclosure abatement
51 Average cost per square foot to enclose asbestos-containing friable materials
52 Intended start of enclosure in LEAs planning enclosure
53 Schools using encapsulation abatement by status of the work
54 Average square feet of asbestos-containing friable materials in schools with encapsulation abatement

Titles (continued)

Table	
55	Average cost per square foot to encapsulate asbestos-containing friable materials
56	Intended start of encapsulation in LEAs planning encapsulation
57	Schools using operations/maintenance/reassessment abatement by status of the work
58	Average square feet of asbestos-containing friable materials in schools using operations/maintenance/reassessment abatement
59	Intended start of operations/maintenance/reassessment in LEAs planning operations/maintenance/reassessment abatement
60	LEAs that claimed exemption from the Asbestos-In-Schools Rule
61	Percent of asbestos-containing materials found in pipe wrap at LEAs
62	LEAs complying with all aspects of the rule by June 30, 1983
62A	LEAs with asbestos that complied with most aspects of the rule by January, 1984
62B	LEAs with asbestos that complied with most aspects of the rule (except notification) by January, 1984
63	LEAs that complied with most aspects of the rule by January, 1984
63B	LEAs complying with most aspects of the rule (except notification) by January, 1984
64	Square footage of asbestos-containing friable materials found in schools

TABLE 1. LOCAL EDUCATION AGENCIES BY TYPE OF AGENCY

	NATIONAL ESTIMATE	
	ESTIMATE	PERCENT
TYPE OF AGENCY		
PUBLIC LEA *	14593	42.68
PRIVATE LEA	19602	57.32
TOTAL	34195	100.00

*Does not include LEAs that consist of only Vocational Technical, Special Education or Adult Education Schools.

Situation at LEA as of January, 1984

TABLE 2. SCHOOLS BY DATE OF CONSTRUCTION *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	ESTIMATED SCHOOLS		ESTIMATED SCHOOLS		ESTIMATED SCHOOLS	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
CONSTRUCTION TIME						
BUILT BEFORE 1/1/79	71507	90.20	19321	99.19	90828	91.97
BUILT AFTER 1/1/79	3158	3.98	32	0.16	3190	3.23
DATE NOT SPECIFIED	4611	5.82	127	0.65	4738	4.80
TOTAL	79276	100.00	19479	100.00	98756	100.00

*For LEAs with at least one school built before January 1, 1979.

Situation at LEA as of January, 1984

TABLE 3. CURRENT STUDENT ENROLLMENT

	NATIONAL ESTIMATE	
	ESTIMATE	PERCENT
TYPE OF AGENCY		
PUBLIC LEA	39295701	88.49
PRIVATE LEA	5111039	11.51
TOTAL	44406740	100.00

as of January, 1984

Reproduced from best available copy.

TABLE 4. LEAS WITH SOME SCHOOLS BUILT BEFORE JANUARY 1, 1979

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
TIME BUILT						
BEFORE 1/1/79	14505	99.40	18441	94.08	32946	96.35
AFTER 1/1/79	88	0.60	1141	5.82	1229	3.59
NOT ASCERTAINED	0	0	21	0.10	21	0.06
TOTAL	14593	100.00	19602	100.00	34195	100.00

Situation at LEA as of January, 1984

TABLE 5. LEAS THAT HAVE AN INSPECTION PROGRAM *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
INSPECTION PROGRAM						
YES, HAS PROGRAM	13792	95.06	14095	76.43	27887	84.64
NO PROGRAM, EXEMPTION CLAIMED	459	3.16	2167	11.75	2626	7.97
NO PROGRAM, NO EXEMPTION CLAIMED	164	1.13	1410	7.65	1574	4.78
NOT ASCERTAINED	90	0.62	768	4.17	859	2.61
TOTAL	14505	100.00	18441	100.00	32946	100.00

*For LEAs with at least one school built before January 1, 1979

Situation at LEA as of January, 1984

Reproduced from best available copy.

TABLE 6. TYPE OF AGENT INSPECTING AT LEAS WITH INSPECTION PROGRAMS *

	TYPE OF AGENCY					
	PUBLIC LEA		PRIVATE LEA		TOTAL	
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
INSPECTOR						
SCHOOL/DISTRICT	5247	38.04	5684	40.33	10931	39.20
OUTSIDE AGENCY	6885	49.92	6238	44.26	13123	47.06
BOTH	784	5.69	623	4.42	1407	5.05
EPA/FEDERAL GOVT	382	2.77	801	5.68	1183	4.24
UNKNOWN	494	3.58	749	5.31	1243	4.46
TOTAL	13792	100.00	14095	100.00	27887	100.00

*For LEAs with at least one school built before January 1, 1979 that have an inspection program.

Situation at LEA as of January, 1984

TABLE 7. STARTING DATE OF INSPECTIONS *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
INSPECTION DATE						
BEFORE 6/1/82	6606	47.90	3203	22.73	9809	35.18
6/1/82 - 7/1/83	5561	40.32	8053	57.14	13615	48.82
AFTER 7/1/83	1004	7.28	2181	15.48	3185	11.42
NOT STARTED YET	21	0.15	0	0	21	0.07
UNKNOWN	600	4.35	657	4.66	1257	4.51
TOTAL	13792	100.00	14095	100.00	27887	100.00

*For LEAs with at least one school built before January 1, 1979 that have an inspection program.

Situation at LEA as of January, 1984

TABLE 8. COMPLETION STATUS OF INSPECTIONS AS OF JANUARY 1, 1984 *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
INSPECTION STATUS	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
COMPLETED	13364	96.90	13572	96.29	26936	96.59
UNDERWAY	309	2.24	177	1.26	486	1.74
SCHEDULED	118	0.86	346	2.45	464	1.66
TOTAL	13792	100.00	14095	100.00	27887	100.00

*For LEAs with at least one school built before January 1, 1979 that have an inspection program.

TABLE 9. DATE INSPECTIONS COMPLETE IN LEA *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
INSPECTION DATE						
BEFORE 7/1/83	9914	74.19	10453	77.02	20367	75.61
AFTER 7/1/83	1427	10.67	2285	16.83	3711	13.78
UNKNOWN	2023	15.14	834	6.15	2858	10.61
TOTAL	13364	100.00	13572	100.00	26936	100.00

*For LEAs with at least one school built before January 1, 1979 that have an inspection program.

Situation at LEA as of January, 1984

Reproduced from best available copy.

TABLE 10. SCHEDULED INSPECTION DATE IN LEAS PLANNING INSPECTIONS *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
PLANNED INSPECTION DATE						
BEFORE 7/1/84	87	73.42	279	80.59	366	78.76
AFTER 7/1/84	8	6.98	21	5.95	29	6.21
UNKNOWN	23	19.60	47	13.47	70	15.03
TOTAL	118	100.00	346	100.00	464	100.00

*For LEAs with at least one school built before January 1, 1979 that have an inspection program.

Situation at LEA as of January, 1984

TABLE 11. DATE INSPECTIONS BEGUN IN LEAS INITIATING INSPECTIONS *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
INSPECTION DATE						
BEFORE 7/1/83	11975	87.58	10952	79.66	22928	83.61
AFTER 7/1/83	1068	7.81	1903	13.84	2971	10.83
UNKNOWN	631	4.61	894	6.50	1524	5.56
TOTAL	13673	100.00	13749	100.00	27422	100.00

*For LEAs with at least one school built before January 1, 1979 that have begun or completed inspections.

Situation at LEA as of January, 1984

Reproduced from
best available copy.

TABLE 12. USE OF EPA TECHNICAL ASSISTANCE PROGRAM BY LEA * **

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
USE OF EPA MATERIALS						
USED TAP	4894	35.79	3671	26.70	8565	31.23
DID NOT USE	8269	60.48	9005	65.50	17275	62.99
UNKNOWN	510	3.73	1073	7.80	1583	5.77
TOTAL	13673	100.00	13749	100.00	27422	100.00

*For LEAs with at least one school built before January 1, 1979 that have begun or completed inspections.

**TAP consists of a toll-free telephone number, regional technical advisors to assist schools, and written guidelines for schools.

Situation at LEA as of January, 1984

TABLE 13. HOW WELL TAP MET NEEDS OF LEA * **

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
DID EPA MATERIALS MEET NEEDS ?						
YES	4583	93.64	3497	95.26	8080	94.33
NO	265	5.42	114	3.11	379	4.43
UNKNOWN	46	0.94	60	1.63	106	1.24
TOTAL	4894	100.00	3671	100.00	8565	100.00

*For LEAs with at least one school built before January 1, 1979 that have begun or completed inspections.

**TAP consists of a toll-free telephone number, regional technical advisors to assist schools, and written guidelines for schools.

Situation at LEA as of January, 1984

TABLE 14. EPA DOCUMENTS AT LEAS USING TECHNICAL ASSISTANCE PROGRAM *

		TYPE OF AGENCY		
		PUBLIC LEA	PRIVATE LEA	ALL LEAS
		NATIONAL ESTIMATE	NATIONAL ESTIMATE	NATIONAL ESTIMATE
		ESTIMATE	ESTIMATE	ESTIMATE
TYPE OF DOCUMENT	DOCUMENT USE			
COMPLIANCE ASSISTANCE GUIDELINES	HAVE, AND USED	2306	1017	3323
	HAVE, DID NOT USE	154	111	265
	HAVE, USE UNKNOWN	77	54	131
	DO NOT HAVE	2358	2489	4847
ORANGE BOOKLET, PART 1	HAVE, AND USED	3826	2546	6371
	HAVE, DID NOT USE	250	145	395
	HAVE, USE UNKNOWN	122	198	319
	DO NOT HAVE	697	782	1479
ORANGE BOOKLET, PART 2	HAVE, AND USED	3676	2426	6101
	HAVE, DID NOT USE	307	200	507
	HAVE, USE UNKNOWN	128	198	326
	DO NOT HAVE	783	848	1630
BLACK BOOKLET	HAVE, AND USED	891	394	1285
	HAVE, DID NOT USE	114	53	166
	HAVE, USE UNKNOWN	10	15	25
	DO NOT HAVE	3880	3209	7089
BLUE BOOKLET	HAVE, AND USED	1120	601	1721

(CONTINUED)

TABLE 14. EPA DOCUMENTS AT LEAS USING TECHNICAL ASSISTANCE PROGRAM *

		TYPE OF AGENCY		ALL LEAS
		PUBLIC LEA	PRIVATE LEA	
		NATIONAL ESTIMATE	NATIONAL ESTIMATE	NATIONAL ESTIMATE
		ESTIMATE	ESTIMATE	ESTIMATE
TYPE OF DOCUMENT	DOCUMENT USE			
BLUE BOOKLET	HAVE, DID NOT USE	177	44	221
	HAVE, USE UNKNOWN	36	15	51
	DO NOT HAVE	3561	3011	6571
OTHER DOCUMENT	HAVE, AND USED	889	1091	1980
	HAVE, DID NOT USE	50	39	89
	HAVE, USE UNKNOWN	212	32	243
	DO NOT HAVE	3744	2509	6253

*For LEAs with at least one school built before January 1, 1979 that have begun or completed inspections.

Situation at LEA as of January, 1984

Reproduced from best available copy.

TABLE 15. LEAS WITH FORM 7730-1 ON FILE *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
STATUS OF FORM 7730-1						
YES, FORM 7730-1 ON FILE	5468	39.99	3352	24.38	8821	32.17
NO, 7730-1 NOT ON FILE	7269	53.16	8951	65.10	16219	59.15
UNKNOWN	936	6.85	1446	10.52	2382	8.69
TOTAL	13673	100.00	13749	100.00	27422	100.00

*For LEAs with at least one school built before January 1, 1979 that have begun or completed inspections.

Situation at LEA as of January, 1984

TABLE 16. DATE FORM 7730-1 COMPLETED FOR LEAS WITH FORM ON FILE *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
DATE FORM COMPLETED						
BEFORE 7/1/83	3425	62.64	2000	59.65	5425	61.51
AFTER 7/1/83	1237	22.62	846	25.22	2082	23.61
UNKNOWN	806	14.74	507	15.12	1313	14.89
TOTAL	5468	100.00	3352	100.00	8821	100.00

*For LEAs with at least one school built before January 1, 1979 that have begun or completed inspections.

Situation at LEA as of January, 1984

Reproduced from best available copy.

TABLE 17. SOURCE OF INFORMATION AT LEA USED TO ANSWER QUESTIONNAIRE *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
SUMMARY DOCUMENT						
NONE	2088	15.27	3990	29.02	6078	22.16
FORM 7730-1	4345	31.78	2481	18.04	6826	24.89
LAB/INSPECTION REPORTS	2327	17.02	3362	24.45	5689	20.75
STATE AGENCY RECORDS	1306	9.55	409	2.98	1715	6.26
NOT ASCERTAINED	3607	26.38	3507	25.51	7114	25.94
TOTAL	13673	100.00	13749	100.00	27422	100.00

*For LEAs with at least one school built before January 1, 1979 that have begun or completed inspections.

Situation at LEA as of January, 1984

TABLE 18. NUMBER OF SCHOOLS INSPECTED FOR FRIABLE MATERIALS

	TYPE OF AGENCY					
	PUBLIC SCHOOLS		PRIVATE SCHOOLS		TOTAL	
	ESTIMATED SCHOOLS		ESTIMATED SCHOOLS		ESTIMATED SCHOOLS	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
INSPECTION STATUS						
INSPECTED SCHOOLS	74607	98.02	14705	75.61	89312	93.46
NOT INSPECTED/UNKNOWN	1511	1.98	4743	24.39	6254	6.54
TOTAL	76118	100.00	19448	100.00	95566	100.00

*For LEAs with at least one school built before January 1, 1979
that have begun or completed inspections.

Situation at LEA as of January, 1984

TABLE 19. NUMBER OF LEAS IN WHICH FRIABLE MATERIAL FOUND *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	ESTIMATED LEAS		ESTIMATED LEAS		ESTIMATED LEAS	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
FRIABLE MATERIALS FOUND						
YES, FRIABLE MATERIALS	7418	54.27	4811	34.99	12229	44.60
NO FRIABLE MATERIALS	5915	43.27	8848	64.36	14763	53.84
NOT ASCERTAINED	337	2.46	90	0.65	426	1.56
TOTAL	13670	100.00	13749	100.00	27419	100.00

*For LEAs with at least one school built before January 1, 1979 that have begun or completed inspections.

Situation at LEA as of January, 1984

TABLE 20. NUMBER OF INSPECTED SCHOOLS WITH FRIABLE MATERIAL *

	TYPE OF AGENCY				TOTAL	
	PUBLIC SCHOOLS		PRIVATE SCHOOLS			
	ESTIMATED SCHOOLS		ESTIMATED SCHOOLS		ESTIMATED SCHOOLS	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
FRIABLE MATERIALS FOUND						
FRIABLE MATERIALS PRESENT	29433	39.45	5388	36.64	34821	38.99
NO FRIABLE MATERIALS/UNKNOWN	45174	60.55	9317	63.36	54491	61.01
TOTAL	74607	100.00	14705	100.00	89312	100.00

*For LEAs with at least one school built before January 1, 1979 that have begun or completed inspections.

Situation at LEA as of January, 1984

TABLE 21. NUMBER OF SCHOOLS FOR WHICH SAMPLES WERE ANALYZED *

	TYPE OF AGENCY				TOTAL	
	PUBLIC SCHOOLS		PRIVATE SCHOOLS			
	ESTIMATED SCHOOLS		ESTIMATED SCHOOLS		ESTIMATED SCHOOLS	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
SAMPLES ANALYZED						
SCHOOLS WITH SAMPLES ANALYZED	24379	82.83	4259	79.05	28638	82.24
NO SAMPLES ANALYZED/UNKNOWN	5054	17.17	1129	20.95	6183	17.76
TOTAL	29433	100.00	5388	100.00	34821	100.00

*For inspected schools built before January 1, 1979 in which friable materials were found.

Situation at LEA as of January, 1984

TABLE 22. NUMBER OF LEAS WITH ONE OR MORE SCHOOLS HAVING ASBESTOS

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	ESTIMATED LEAS		ESTIMATED LEAS		ESTIMATED LEAS	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
ASBESTOS FOUND						
YES ASBESTOS	6842	92.23	4189	87.06	11031	90.20
NO ASBESTOS FOUND	314	4.23	427	8.87	741	6.06
NOT ASCERTAINED	262	3.54	196	4.07	458	3.75
TOTAL	7418	100.00	4811	100.00	12229	100.00

*For LEAs with at least one school built before January 1, 1979 that inspected and found friable materials in one or more school.

Situation at LEA as of January, 1984

TABLE 23. NUMBER OF INSPECTED SCHOOLS FINDING ASBESTOS *

	TYPE OF AGENCY				TOTAL	
	PUBLIC SCHOOLS		PRIVATE SCHOOLS			
	ESTIMATED SCHOOLS		ESTIMATED SCHOOLS		ESTIMATED SCHOOLS	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
WAS ASBESTOS FOUND						
ASBESTOS WAS FOUND	26136	35.03	4693	31.92	30830	34.52
NO ASBESTOS/UNKNOWN	48471	64.97	10012	68.08	58482	65.48
TOTAL	74607	100.00	14705	100.00	89312	100.00

*For inspected schools built before January 1, 1979 in which friable materials were found.

Situation at LEA as of January, 1984

TABLE 24. AVERAGE NUMBER SQUARE FEET OF ACFM PER SCHOOL *

	TYPE OF AGENCY				TOTAL	
	PUBLIC SCHOOLS		PRIVATE SCHOOLS			
	SCHOOLS HAVING ACFM		SCHOOLS HAVING ACFM		SCHOOLS HAVING ACFM	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
AVERAGE SQ FT ASBESTOS						
< 1,000	4062	15.54	431	9.19	4493	14.57
1,000 - 4,999	4333	16.58	735	15.66	5068	16.44
5,000 - 9,999	3410	13.05	392	8.35	3802	12.33
10,000 OR MORE	4833	18.49	267	5.68	5100	16.54
PIPE WRAP ONLY	7683	29.40	2287	48.72	9970	32.34
UNKNOWN	1815	6.94	582	12.41	2397	7.78
TOTAL	26136	100.00	4693	100.00	30830	100.00

*For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found

Situation at LEA as of January, 1984

TABLE 25. NUMBER OF EMPLOYEES IN LEAS WHERE ACFM FOUND *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
NUMBER OF EMPLOYEES						
< 50 EMPLOYEES	2572	37.60	3398	81.12	5970	54.13
50 - 99	1539	22.50	595	14.20	2134	19.35
100 - 499	2247	32.84	174	4.15	2421	21.94
500+ EMPLOYEES	419	6.12	4	0.09	423	3.83
NOT ASCERTAINED	65	0.95	18	0.44	83	0.75
TOTAL	6842	100.00	4189	100.00	11031	100.00

*For LEAs with at least one school built before January 1, 1979, that inspected and found asbestos-containing friable materials in one or more school.

Situation at LEA as of January, 1984

TABLE 26. NUMBER OF TEACHERS/CUSTODIANS/OTHERS IN LEAS WHERE ACFM WAS FOUND *

	TYPE OF AGENCY		
	PUBLIC LEA	PRIVATE LEA	TOTAL
	NATIONAL ESTIMATE	NATIONAL ESTIMATE	NATIONAL ESTIMATE
TEACHERS			
< 50	3248	3626	6874
50 - 99	1457	390	1847
100 - 499	1641	79	1721
500 - 999	172	3	175
1,000 +	77	1	78
NOT ASCERTAINED	247	89	336
TOTAL	6842	4189	11031
CUSTODIANS			
< 10	2742	3523	6266
10 - 49	3608	630	4238
50 - 99	195	3	198
100+	113	15	128
NOT ASCERTAINED	183	18	201
TOTAL	6842	4189	11031
OTHER STAFF			
< 10	2792	3493	6285
10 - 49	2826	526	3352
50 - 99	529	50	579
100 - 199	260	9	268
200+	175	1	177
NOT ASCERTAINED	261	110	371
TOTAL	6842	4189	11031

*For LEAs with at least one school built before January 1, 1979, that inspected and found asbestos-containing friable materials in one or more school.

Situation at LEA as of January, 1984

TABLE 27. DISTRIBUTION OF LEAS BY NUMBER OF STUDENTS EXPOSED TO ACFM *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
AVERAGE NUMBER OF STUDENTS						
< 600 STUDENTS	2784	40.69	3656	87.28	6440	58.38
600 - 1,199	1455	21.27	474	11.31	1929	17.49
1,200 - 2,499	1336	19.53	39	0.94	1376	12.47
2,500 - 4,999	726	10.61	6	0.15	732	6.64
5,000 AND MORE	485	7.08	14	0.33	498	4.52
NOT ASCERTAINED	56	0.81	.	.	56	0.51
TOTAL	6842	100.00	4189	100.00	11031	100.00

*For LEAs with at least one school built before January 1, 1979, that inspected and found asbestos-containing friable materials in one or more school.

Situation at LEA as of January, 1984

TABLE 27A. DISTRIBUTION OF INSPECTED LEAS BY ENROLLMENT *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
NUMBER OF STUDENTS						
< 600 STUDENTS	4685	34.26	12385	90.08	17069	62.25
600 - 1,199	2495	18.24	1176	8.55	3671	13.39
1,200 - 2,499	2922	21.37	163	1.19	3085	11.25
2,500 - 4,999	1962	14.35	12	0.09	1974	7.20
5,000 OR MORE	1598	11.68	14	0.10	1611	5.88
NOT ASCERTAINED	12	0.09	.	.	12	0.05
TOTAL	13673	100.00	13749	100.00	27422	100.00

*For LEAs with at least one school built before January 1, 1979 that have begun or completed inspections.

Situation at LEA as of January, 1984

TABLE 28. AVERAGE SAMPLES PER AREA ANALYZED FOR FRIABLE MATERIAL *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
AVERAGE SAMPLES PER AREA						
1 - 2 SAMPLES	2231	34.37	1367	36.25	3598	35.06
3 SAMPLES	2147	33.08	1189	31.52	3336	32.51
4 OR MORE SAMPLES	1185	18.26	481	12.76	1666	16.23
UNKNOWN	927	14.29	735	19.47	1662	16.19
TOTAL	6490	100.00	3772	100.00	10261	100.00

*For LEAs with at least one school built before January 1, 1979 that inspected, found friable materials, and sampled in one or more school.

Situation at LEA as of January, 1984

TABLE 29. FIRST DATE SAMPLES TAKEN AT LEAS ANALYZING FRIABLE MATERIAL *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
INITIAL SAMPLING DATE						
SAMPLES TAKEN BEFORE 7/1/83	5763	88.81	3245	86.04	9009	87.79
SAMPLES TAKEN AFTER 7/1/83	422	6.50	489	12.96	911	8.87
UNKNOWN	304	4.69	38	1.00	342	3.34
TOTAL	6490	100.00	3772	100.00	10261	100.00

*For LEAs with at least one school built before January 1, 1979 that inspected, found friable materials, and sampled in one or more school.

Situation at LEA as of January, 1984

TABLE 30. LAST DATE SAMPLES TAKEN IN LEAS ANALYZING FRIABLE MATERIAL *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
DATE LAST SAMPLES TAKEN	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
SAMPLING STILL IN PROGRESS	115	1.78	30	0.79	145	1.41
BEFORE 7/1/83	5232	80.62	3119	82.69	8351	81.38
AFTER 7/1/83	836	12.88	559	14.83	1395	13.60
UNKNOWN	306	4.72	64	1.69	370	3.61
TOTAL	6490	100.00	3772	100.00	10261	100.00

*For LEAs with at least one school built before January 1, 1979 that inspected, found friable materials, and sampled in one or more school.

Situation at LEA as of January, 1984

TABLE 31. FIRST DATE FRIABLE MATERIAL SAMPLES SENT FOR ANALYSIS *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
FIRST DATE SAMPLES SENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
NO SAMPLES SENT	36	0.55	26	0.69	62	0.60
BEFORE 7/1/83	5526	85.16	3193	84.66	8720	84.97
AFTER 7/1/83	475	7.31	489	12.96	963	9.39
UNKNOWN	453	6.98	64	1.69	517	5.04
TOTAL	6490	100.00	3772	100.00	10261	100.00

*For LEAs with at least one school built before January 1, 1979 that inspected, found friable materials, and sampled in one or more school.

Situation at LEA as of January, 1984

Reproduced from
best available copy.

TABLE 32. LAST DATE FRIABLE MATERIAL SAMPLES SENT FOR ANALYSIS *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
LAST DATE SAMPLES SENT						
SAMPLING STILL IN PROGRESS	80	1.24	30	0.79	110	1.07
BEFORE 7/1/83	5068	78.10	3152	83.58	8221	80.11
AFTER 7/1/83	907	13.97	525	13.93	1432	13.96
UNKNOWN	435	6.70	64	1.69	498	4.86
TOTAL	6490	100.00	3772	100.00	10261	100.00

*For LEAs with at least one school built before January 1, 1979 that inspected, found friable materials, and sampled in one or more school.

Situation at LEA as of January, 1984

TABLE 33. FIRST DATE TEST RESULTS RECEIVED FROM FRIABLE SAMPLES *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
FIRST DATE ANALYSIS RESULTS RECEIVED						
NO RESULTS RECEIVED	70	1.08	52	1.38	122	1.19
BEFORE 7/1/83	5067	78.07	2762	73.22	7828	76.29
AFTER 7/1/83	802	12.36	785	20.81	1587	15.47
UNKNOWN	551	8.49	173	4.59	724	7.06
TOTAL	6490	100.00	3772	100.00	10261	100.00

*For LEAs with at least one school built before January 1, 1979 that inspected, found friable materials, and sampled in one or more school.

Situation at LEA as of January, 1984

TABLE 54. LAST DATE TEST RESULTS RECEIVED FROM FRIABLE SAMPLES *

	TYPE OF AGENCY					
	PUBLIC LEA		PRIVATE LEA		TOTAL	
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
LAST DATE ANALYSIS RESULTS RECEIVED						
TESTS STILL IN PROGRESS	144	2.22	50	1.34	194	1.89
BEFORE 7/1/83	4580	70.58	2701	71.62	7282	70.96
AFTER 7/1/83	1278	19.69	851	22.56	2129	20.74
UNKNOWN	488	7.52	169	4.48	657	6.40
TOTAL	6490	100.00	3772	100.00	10261	100.00

*For LEAs with at least one school built before January 1, 1979 that inspected, found friable materials, and sampled in one or more school.

Situation at LEA as of January, 1984

TABLE 35. SCHOOLS WHERE ACFM WERE FOUND, BY CONSTRUCTION DATE *

	TYPE OF AGENCY					
	PUBLIC SCHOOLS		PRIVATE SCHOOLS		ALL SCHOOLS	
	NATIONAL ESTIMATE	PERCENT OF ALL	NATIONAL ESTIMATE	PERCENT OF ALL	NATIONAL ESTIMATE	PERCENT OF ALL
	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE
PERIOD OF CONSTRUCTION						
1969-1978	1472	13.5	126	3.7	1598	11.1
1959-1968	6073	34.3	1368	28.3	7441	33.0
1949-1958	7072	37.8	1337	30.1	8409	36.3
1939-1948	1627	32.2	429	33.1	2055	32.4
1929-1938	2132	32.6	302	31.6	2434	32.5
1919-1928	2453	36.1	349	20.2	2802	32.8
1909-1918	1198	35.2	331	34.3	1529	35.0
1899-1908	556	39.4	132	19.6	688	33.0
BEFORE 1899	348	37.1	311	31.2	659	34.1

*For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found.
Some schools did not report date of construction and are not included in this table.

Situation at LEA as of January, 1984

TABLE 36. NUMBER OF SCHOOLS WHICH PROVIDED NOTICE TO EMPLOYEES *

	TYPE OF AGENCY				TOTAL	
	PUBLIC SCHOOLS		PRIVATE SCHOOLS			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
NOTIFICATION OF EMPLOYEES						
SCHOOLS NOT NOTIFIED	5036	19.27	841	17.92	5877	19.06
SCHOOLS NOTIFIED	20820	79.66	3574	76.16	24394	79.12
UNKNOWN	281	1.07	278	5.92	559	1.81
TOTAL	26136	100.00	4693	100.00	30830	100.00

* For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found.

Situation at LEA as of January, 1984

TABLE 37. METHOD USED BY LEA TO NOTIFY EMPLOYEES *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
METHOD OF NOTIFICATION						
FORM 7730-3	2519	45.57	1275	39.32	3794	43.26
STAFF MEETING	933	16.88	1169	36.04	2102	23.96
NOTICE POSTED	793	14.35	288	8.87	1081	12.32
OFFICIAL LETTER	446	8.08	227	7.00	674	7.68
OTHER	836	15.12	284	8.76	1120	12.77
TOTAL	5529	100.00	3242	100.00	8771	100.00

*For LEAs with at least one school built before January 1, 1979 that inspected and found asbestos-containing friable materials in one or more school.

Situation at LEA as of January, 1984

Note: To meet the employee notification requirement of the Asbestos-In-Schools Rule

1) Notice to school employees must be posted indefinitely in primary administrative and custodial offices (using EPA Form 7730-3 or equivalent);

2) A copy of the "Guide for Reducing Asbestos Exposure" (EPA Form 7730-2) must be distributed to all custodial or maintenance employees; and

3) Written notice of the location of all ACFM in the school must be provided to building employees.

TABLE 38. FIRST DATE NOTICE PROVIDED TO EMPLOYEES IN THE LEA *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
NOTIFICATION DATE						
NOTICE GIVEN BEFORE 7/1/83	3818	69.06	1965	60.61	5783	65.94
NOTICE GIVEN AFTER 7/1/83	1393	25.20	1080	33.31	2473	28.19
UNKNOWN	318	5.74	197	6.08	515	5.87
TOTAL	5529	100.00	3242	100.00	8771	100.00

*For LEAS with at least one school built before January 1, 1979, that inspected and found asbestos-containing friable materials in one or more school.

Situation at LEA as of January, 1984

TABLE 39 . NUMBER OF SCHOOLS PROVIDING NOTICE TO PARENTS AND/OR PTA *

	TYPE OF AGENCY				TOTAL	
	PUBLIC SCHOOLS		PRIVATE SCHOOLS			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
METHOD OF NOTIFYING PARENTS						
DID NOT NOTIFY	5001	19.13	766	16.32	5767	18.70
NOTIFIED PTA	14525	55.58	2191	46.68	16716	54.22
NOTIFIED PARENTS	4957	18.97	1395	29.71	6351	20.60
UNKNOWN	1653	6.33	342	7.29	1996	6.47
TOTAL	26136	100.00	4693	100.00	30830	100.00

*For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found.

Situation at LEA as of January, 1984

TABLE 40. METHOD USED BY LEA TO NOTIFY PTA *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
METHOD OF NOTIFICATION						
PTA MEETING	643	21.48	774	41.65	1417	29.21
PTA NEWSLETTER	502	16.79	339	18.23	841	17.34
PTA INFORMED	1288	43.05	579	31.13	1867	38.48
NEWSPAPER	147	4.92	18	0.98	165	3.41
OTHER	412	13.77	149	8.01	561	11.56
TOTAL	2993	100.00	1859	100.00	4851	100.00

*For LEAs with at least one school built before January 1, 1979, that inspected and found asbestos-containing friable materials in one or more school.

Situation at LEA as of January, 1984

TABLE 41. · DATE FIRST NOTICE MADE TO ANY PTA FROM THE LEA *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
DATE PTA NOTIFIED						
NOTICE GIVEN BEFORE 7/1/83	1662	55.53	914	49.16	2576	53.09
NOTICE GIVEN AFTER 7/1/83	999	33.39	740	39.84	1740	35.86
UNKNOWN	332	11.08	204	11.00	536	11.05
TOTAL	2993	100.00	1859	100.00	4851	100.00

*For LEAs with at least one school built before January 1, 1979, that inspected and found asbestos-containing friable materials in one or more school.

Situation at LEA as of January, 1984

TABLE 42. METHOD USED BY LEA TO NOTIFY PTA EQUIVALENT *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
METHOD OF NOTIFYING PARENTS						
NOTICE MAILED	738	40.05	694	49.77	1432	44.24
NEWSLETTER	465	25.24	138	9.89	603	18.63
NEWSPAPER	482	26.15	52	3.70	533	16.48
OTHER	158	8.55	511	36.64	668	20.66
TOTAL	1842	100.00	1395	100.00	3236	100.00

*For LEAs with at least one school built before January 1, 1979 that inspected and found asbestos-containing friable materials in one or more school.

Situation at LEA as of January, 1984

TABLE 43. FIRST DATE LEA NOTIFIED ANY PTA EQUIVALENT *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
DATE PARENTS FIRST NOTIFIED						
BEFORE 7/1/83	1039	56.44	581	41.63	1620	50.06
AFTER 7/1/83	550	29.84	695	49.86	1245	38.46
UNKNOWN	253	13.72	119	8.51	371	11.48
TOTAL	1842	100.00	1395	100.00	3236	100.00

*For LEAs with at least one school built before January 1, 1979 that inspected and found asbestos-containing friable materials in one or more school.

Situation at LEA as of January, 1984

Reproduced from
best available copy.

TABLE 44. NUMBER OF SCHOOLS WITH ABATEMENT COMPLETED, ONGOING, OR PLANNED *

14:40 FRIDAY, APRIL 20

	TYPE OF AGENCY				TOTAL	
	PUBLIC SCHOOLS		PRIVATE SCHOOLS			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
ABATEMENT STATUS						
NO ABATEMENT	1932	7.39	573	12.22	2505	8.13
ABATEMENT COMPLETED	11436	43.75	2050	43.67	13485	43.74
ABATEMENT ON-GOING	6191	23.69	922	19.64	7113	23.07
ABATEMENT PLANNED	6014	23.01	1120	23.87	7134	23.14
INTENDED - STATUS UNKNOWN	63	0.24	.	.	63	0.20
UNKNOWN	501	1.92	28	0.60	529	1.72
TOTAL	26136	100.00	4693	100.00	30830	100.00

* For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found.

Situation at LEA as of January, 1984

TABLE 45. STATUS OF REMOVAL WORK IN SCHOOLS USING THIS METHOD *

11:57 MONDAY, APRIL 30

	TYPE OF AGENCY				TOTAL	
	PUBLIC SCHOOLS		PRIVATE SCHOOLS			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
REMOVAL STATUS						
REMOVAL COMPLETED	6064	58.75	1050	60.68	7114	59.02
REMOVAL ON-GOING	486	4.71	116	6.69	602	4.99
REMOVAL PLANNED	3772	36.54	565	32.63	4337	35.98
TOTAL	10323	100.00	1730	100.00	12053	100.00

*For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found and which use removal as a method of abatement.

Situation at LEA as of January, 1984

TABLE 46. AVERAGE SQ FT OF ACFM IN SCHOOLS USING REMOVAL ABATEMENT *

	TYPE OF AGENCY		
	PUBLIC SCHOOLS	PRIVATE SCHOOLS	ALL SCHOOLS
	AVERAGE SQUARE FEET	AVERAGE SQUARE FEET	AVERAGE SQUARE FEET
STATUS OF ABATEMENT			
COMPLETED	6908	2400	6338
ON-GOING	7151	4352	6450
PLANNED	9083	5117	8470

*For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found and which use removal as a method of abatement.

Situation at LEA as of January, 1984

TABLE 47. AVERAGE COST PER SQUARE FOOT TO REMOVE ACFM *

	TYPE OF AGENCY		
	PUBLIC SCHOOLS	PRIVATE SCHOOLS	ALL SCHOOLS
	AVERAGE COST	AVERAGE COST	AVERAGE COST
STATUS OF ABATEMENT			
COMPLETED	3.37	3.06	3.34
ON-GOING	2.46	0.99	2.20
PLANNED	3.47	0.67	3.01

*For LEAs with at least one school built before January 1, 1979, that inspected and found asbestos-containing friable materials and that plan to use removal as a method of abatement.

Situation at LEA as of January, 1984.

TABLE 48. INTENDED START OF REMOVAL IN LEAS PLANNING REMOVAL *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
PLANNED ONSET OF REMOVAL						
< 3 MONTHS	87	9.41	1	0.42	88	7.23
3 - 6 MONTHS	371	40.37	158	53.65	530	43.59
7 - 12 MONTHS	272	29.55	75	25.40	347	28.54
OVER 1 YEAR	120	13.06	40	13.56	160	13.18
NOT ASCERTAINED	70	7.61	21	6.97	91	7.46
TOTAL	920	100.00	295	100.00	1215	100.00

*For LEAs with at least one school built before January 1, 1979 that inspected and found asbestos-containing friable materials and that plan to use removal as a method of abatement.

Situation at LEA as of January, 1984

TABLE 49. SCHOOLS USING ENCLOSURE ABATEMENT, BY STATUS OF WORK *

	TYPE OF AGENCY				TOTAL	
	PUBLIC SCHOOLS		PRIVATE SCHOOLS			
	SCHOOLS		SCHOOLS		SCHOOLS	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
STATUS OF ENCLOSURE WORK						
COMPLETED	2216	61.59	774	80.41	2990	65.56
ON-GOING	564	15.67	49	5.10	613	13.44
PLANNED	818	22.74	139	14.48	957	20.99
TOTAL	3598	100.00	962	100.00	4560	100.00

***For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found and which use enclosure as a method of abatement.**

Situation at LEA as of January, 1984

TABLE 50. AVERAGE SQ FT OF ACFM IN SCHOOLS USING ENCLOSURE ABATEMENT *

	TYPE OF AGENCY		
	PUBLIC SCHOOLS	PRIVATE SCHOOLS	ALL SCHOOLS
	AVERAGE SQUARE FEET	AVERAGE SQUARE FEET	AVERAGE SQUARE FEET
STATUS OF ABATEMENT			
COMPLETED	4823	1515	3958
ON-GOING	3523	124	3036
PLANNED	4247	1144	3711

*For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found and which use enclosure as a method of abatement.

Situation at LEA as of January, 1984

TABLE 51. AVERAGE COST PER SQUARE FOOT TO ENCLOSE ACEM *

	TYPE OF AGENCY		
	PUBLIC SCHOOLS	PRIVATE SCHOOLS	ALL SCHOOLS
	AVERAGE COST	AVERAGE COST	AVERAGE COST
STATUS OF ABATEMENT			
COMPLETED	2.84	6.12	3.99
ON-GOING	3.29	0.00	3.29
PLANNED	3.51	2.00	3.32

*For LEAs with at least one school built before January 1, 1979 that inspected and found asbestos-containing friable materials and that plan to use enclosure as a method of abatement.

Situation at LEA as of January, 1984

TABLE 52. INTENDED START OF ENCLOSURE IN LEAS PLANNING ENCLOSURE *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
PLANNED ONSET OF ENCLOSURE						
< 3 MONTHS	86	29.04	21	14.76	106	24.45
3 - 6 MONTHS	141	47.76	82	59.11	223	51.40
7 - 12 MONTHS	40	13.57	13	9.57	53	12.29
OVER 1 YEAR	6	1.97	.	.	6	1.34
NOT ASCERTAINED	23	7.66	23	16.57	46	10.52
TOTAL	295	100.00	139	100.00	434	100.00

*For LEAs with at least one school built before January 1, 1979 that inspected and found asbestos-containing friable materials and that plan to use enclosure as a method of abatement.

Situation at LEA as of January, 1984

TABLE 53. SCHOOLS USING ENCAPSULATION ABATEMENT, BY STATUS OF WORK *

	TYPE OF AGENCY				TOTAL	
	PUBLIC SCHOOLS		PRIVATE SCHOOLS			
	SCHOOLS		SCHOOLS		SCHOOLS	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
STATUS OF ENCAPSULATION WORK						
COMPLETED	8335	78.26	1343	76.45	9679	78.00
ON-GOING	618	5.81	107	6.11	726	5.85
PLANNED	1698	15.94	306	17.44	2004	16.15
TOTAL	10651	100.00	1757	100.00	12409	100.00

*For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found and which use encapsulation as a method of abatement.

Situation at LEA as of January, 1984

TABLE 54. AVERAGE SQ FT ACFM IN SCHOOLS WITH ENCAPSULATION ABATEMENT *

	TYPE OF AGENCY		
	PUBLIC SCHOOLS	PRIVATE SCHOOLS	ALL SCHOOLS
	AVERAGE SQUARE FEET	AVERAGE SQUARE FEET	AVERAGE SQUARE FEET
STATUS OF ABATEMENT			
COMPLETED	7341	3291	6853
ON-GOING	4080	5570	4316
PLANNED	5710	9278	6154

*For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found and which use encapsulation as a method of abatement.

Situation at LEA as of January, 1984

TABLE 55. AVERAGE COST PER SQUARE FOOT TO ENCAPSULATE ACBM *

	TYPE OF AGENCY		
	PUBLIC SCHOOLS	PRIVATE SCHOOLS	ALL SCHOOLS
	AVERAGE COST	AVERAGE COST	AVERAGE COST
STATUS OF ABATEMENT			
COMPLETED	2.42	4.84	2.65
ON-GOING	1.04	2.27	1.17
PLANNED	1.15	2.00	1.22

*For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found and which use encapsulation as a method of abatement.

Situation at LEA as of January 1984

TABLE 56. INTENDED START OF ENCAPSULATION IN LEAS PLANNING ENCAPSULATION *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
PLANNED ONSET OF ENCAPSULATION						
< 3 MONTHS	57	10.10	81	26.57	138	15.92
3 - 6 MONTHS	213	37.97	166	54.28	380	43.73
7 - 12 MONTHS	177	31.49	21	6.71	198	22.75
OVER 1 YEAR	32	5.70	15	4.90	47	5.42
NOT ASCERTAINED	83	14.73	23	7.53	106	12.19
TOTAL	562	100.00	306	100.00	869	100.00

*For LEAs with at least one school built before January 1, 1979 that inspected and found asbestos-containing friable materials and that plan to use encapsulation as a method of abatement.

Situation at LEA as of January, 1984

TABLE 57. SCHOOLS USING O/M/R ABATEMENT, BY STATUS OF WORK *

	TYPE OF AGENCY				TOTAL	
	PUBLIC SCHOOLS		PRIVATE SCHOOLS			
	SCHOOLS		SCHOOLS		SCHOOLS	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
STATUS OF OTHER OPERATIONS WORK						
COMPLETED	2545	22.37	255	18.82	2801	21.99
ON-GOING	6461	56.79	819	60.39	7280	57.18
PLANNED	2370	20.84	282	20.79	2652	20.83
TOTAL	11377	100.00	1356	100.00	12734	100.00

*For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found and which use operations/maintenance/reassessment as a method of abatement.

Situation at LEA as of January, 1984

TABLE 58. AVERAGE SQ FT OF ACFM IN SCHOOLS USING O/M/R ABATEMENT *

	TYPE OF AGENCY		
	PUBLIC SCHOOLS	PRIVATE SCHOOLS	ALL SCHOOLS
	AVERAGE SQUARE FEET	AVERAGE SQUARE FEET	AVERAGE SQUARE FEET
STATUS OF ABATEMENT			
COMPLETED	9780	3869	9293
ON-GOING	10399	3799	9819
PLANNED	7654	3385	6937

*For inspected schools built before January 1, 1979 in which asbestos-containing friable materials were found and which use operations/maintenance/reassessment as a method of abatement.

Situation at LEA as of January, 1984

TABLE 59. INTENDED START OF O/M/R IN LEAS PLANNING O/M/R ABATEMENT *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
PLANNED ONSET OF O/M/R						
< 3 MONTHS	96	14.44	156	55.46	252	26.67
3 - 6 MONTHS	183	27.54	56	19.80	238	25.23
7 - 12 MONTHS	143	21.53	56	20.02	199	21.08
OVER 1 YEAR	64	9.67	13	4.73	77	8.20
NOT ASCERTAINED	178	26.82	.	.	178	18.82
TOTAL	663	100.00	282	100.00	945	100.00

*For LEAs with at least one school built before January 1, 1979 that inspected and found asbestos-containing friable materials and that plan to us operations/maintenance/reassessment as a method of abatement.

Situation at LEA as of January, 1984

TABLE 60. LEAS THAT CLAIMED EXEMPTION FROM THE ASBESTOS-IN-SCHOOLS RULE *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
REASON FOR EXEMPTION						
INSPECTED PRIOR TO RULE	40	9.92	152	8.51	193	8.77
NO ASBESTOS USED	331	81.55	1586	88.61	1917	87.30
ALL ASBESTOS ELIMINATED	35	8.52	52	2.88	86	3.93
TOTAL	406	100.00	1790	100.00	2196	100.00

***For LEAs with at least one school built before January 1, 1979 that have no inspection program.**

Situation at LEA as of January, 1984

TABLE 61. PERCENT OF ASBESTOS-CONTAINING MATERIALS FOUND IN PIPE WRAP AT LEAS

	TYPE OF AGENCY					
	PUBLIC LEA		PRIVATE LEA		TOTAL	
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
PERCENT PIPE WRAP						
0	1939	28.35	1222	29.18	3162	28.66
1-24	1373	20.07	433	10.33	1806	16.37
25-49	218	3.19	21	0.49	238	2.16
50-74	251	3.66	41	0.98	292	2.64
75-99	274	4.00	161	3.85	435	3.94
100	2710	39.61	2261	53.97	4971	45.06
NOT SPECIFIED	78	1.13	50	1.19	127	1.15
TOTAL	6842	100.00	4189	100.00	11031	100.00

*For LEAs with at least one school built before January 1, 1979, that inspected and found asbestos-containing friable materials in one or more school.

Situation at LEA as of January, 1984

TABLE 62. LEAS COMPLYING WITH ALL ASPECTS OF RULE BY 6/30/83 *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
COMPLIANCE STATUS						
COMPLIED	1529	11.44	1370	10.09	2899	10.76
DID NOT COMPLY	11836	88.56	12202	89.91	24037	89.24
TOTAL	13364	100.00	13572	100.00	26936	100.00

*For LEAs with at least one school built before January 1, 1979 that have completed inspections.

*1. All schools in LEA built before January 1, 1979 were inspected by the end of June, 1983.
2. LEAs have Form 7730-1 on file and completed it before the end of June, 1983.
3. For LEAs that sampled, at least three samples per homogeneous sampling area were taken with the last results having been received before the end of June, 1983.
4. Employees were notified in schools with asbestos-containing friable materials using Form 7730-3 with the first notification occurring before the end of June, 1983.
5. Parents were notified in schools with asbestos-containing friable materials with the first notification occurring before the end of June, 1983.

TABLE 62A. LEAS WITH ASBESTOS THAT COMPLIED WITH MOST ASPECTS OF THE RULE BY JANUARY,1984 *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
COMPLIANCE STATUS						
COMPLIED	1393	20.35	955	22.79	2347	21.28
DID NOT COMPLY	5449	79.65	3234	77.21	8683	78.72
TOTAL	6842	100.00	4189	100.00	11031	100.00

*For LEAs with at least one school built before January 1, 1979 that inspected and found asbestos-containing friable materials in one or more school.

Situation at LEA as of January, 1984

*1. All schools in LEA built before January 1, 1979 were inspected.
2. LEAs have some documentation on file describing inspection results.
3. LEA took some samples of friable materials for analysis.
4. LEA notified employees and parents at schools where asbestos-containing friable materials were found.

TABLE 62B. LEAS WITH ASBESTOS THAT COMPLIED WITH MOST ASPECTS OF THE RULE BY JANUARY,1984 *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
COMPLIANCE STATUS						
COMPLIED	3662	53.52	2190	52.29	5852	53.05
DID NOT COMPLY	3180	46.48	1998	47.71	5179	46.95
TOTAL	6842	100.00	4189	100.00	11031	100.00

*1. All schools in LEA built before January 1, 1979 were inspected.
2. LEAs have some documentation on file describing inspection results.
3. LEA took some samples of friable materials for analysis.

Situation at LEA as of January, 1984

*For LEAs with at least one school built before January 1, 1979 that have completed inspections.

TABLE 63. LEAS COMPLYING WITH MOST ASPECTS OF THE RULE BY JANUARY.1984 *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
COMPLIANCE STATUS						
COMPLIED	5179	38.75	5872	43.26	11050	41.02
DID NOT COMPLY	8186	61.25	7700	56.74	15886	58.98
TOTAL	13364	100.00	13572	100.00	26936	100.00

*For LEAs with at least one school built before January 1, 1979 that have completed inspections.

Situation at LEA as of January, 1984

*1. All schools in LEA built before January 1, 1979 were inspected.
2. LEAs have some documentation on file describing inspection results.
3. LEA took some samples of friable materials for analysis.
4. LEA notified employees and parents at schools where asbestos-containing friable materials were found.

TABLE 63A. LEAS COMPLYING WITH MOST ASPECTS OF THE RULE BY JANUARY,1984 *

	TYPE OF AGENCY				TOTAL	
	PUBLIC LEA		PRIVATE LEA			
	NATIONAL ESTIMATE		NATIONAL ESTIMATE		NATIONAL ESTIMATE	
	ESTIMATE	PERCENT	ESTIMATE	PERCENT	ESTIMATE	PERCENT
COMPLIANCE STATUS						
COMPLIED	7377	55.20	7107	52.37	14484	53.77
DID NOT COMPLY	5988	44.80	6464	47.63	12452	46.23
TOTAL	13364	100.00	13572	100.00	26936	100.00

*For LEAs with at least one school built before January 1, 1979 that have completed inspections.

Situation at LEA as of January, 1984

*1. All schools in LEA built before January 1, 1979 were inspected.
2. LEAs have some documentation on file describing inspection results.
3. LEA took some samples of friable materials for analysis.

TABLE 64. SQUARE FOOTAGE OF ACFM FOUND IN SCHOOLS *

	TYPE OF AGENCY		TOTAL
	PUBLIC LEA	PRIVATE LEA	
	NATIONAL ESTIMATE	NATIONAL ESTIMATE	NATIONAL ESTIMATE
	ESTIMATE	ESTIMATE	ESTIMATE
ASBESTOS FOUND			
SQUARE FOOTAGE OF ASBESTOS	159562978	15738086	175301065
LEAS WITH PIPE WRAP ONLY	2811	2261	5072
LEAS NOT ASCERTAINED	258	436	694

*For LEAs with at least one school built before January 1, 1979, that inspected and found asbestos-containing friable materials in one or more school.

Situation at LEA as of January, 1984

APPENDIX B

QUESTIONNAIRE

INTRO: Hello, my name is _______ and I'm calling from the Washington, D.C. area for the Environmental Protection Agency. We recently sent you a questionnaire for a study we are doing on the asbestos inspection and notification rule. Are you the person who can best provide me with your (schools'/agency's) answers to the questionnaire?

OMB #: 2070-0019
Expires: Aug. 31, 1984

U.S. Environmental Protection Agency
Asbestos-In-Schools Identification and Notification Rule Questionnaire

(label)

PLEASE RECORD THE FOLLOWING INFORMATION, ONLY IF DIFFERENT FROM THE LABEL ABOVE.

Name of School or School District: ______________________________

Mailing Address: ______________________________
Street or PO Box

______________________________ 16-17
City State Zip Code

I. AGENCY INFORMATION

1. What type of education agency is this? [CIRCLE ONLY ONE CODE]

   a. Public school district. 01
   b. Private school system (made up of two or more schools, administered by this agency). 02
   c. Private school. 03
   d. Other [SPECIFY]: ______________________________ 04

   18-19

2. If this is a school district or system, how many schools are administered or governed by this system?

   NUMBER OF SCHOOLS: ______________________________ 20-22

3. What is the total number of students currently enrolled in your school(s)?

NUMBER OF STUDENTS: ______________________________ 23-32

4. Were any of your school buildings built before January 1, 1979? [INCLUDE BUILDINGS THAT ARE LEASED, RENTED OR USED, AS WELL AS BUILDINGS THAT ARE OWNED. CIRCLE ONLY ONE CODE]

Yes [GO ON TO QUESTION 5] 1
No [SKIP QUESTIONS 5 THROUGH 56 OF THIS QUESTIONNAIRE. WHEN THE INTERVIEWER CALLS, YOU WILL ONLY NEED TO GIVE GIVE ANSWERS FOR QUESTIONS 1 THROUGH 4]. 2 33

5. How many of your schools were built during the following decades? [IF A SCHOOL USES BUILDINGS OR PARTS OF BUILDINGS THAT WERE BUILT IN DIFFERENT DECADES, PLEASE CLASSIFY THE SCHOOL ACCORDING TO THE OLDEST STRUCTURE, RATHER THAN THE NEWEST STRUCTURE. IF THERE IS ONLY ONE SCHOOL WRITE "1" NEXT TO THE DECADE OF CONSTRUCTION.]

DECADE	NUMBER OF SCHOOLS	
a. 1979 - 1983		34-36
b. 1969 - 1978		37-39
c. 1959 - 1968		40-42
d. 1949 - 1958		43-45
e. 1939 - 1948		46-48
f. 1929 - 1938		49-51
g. 1919 - 1928		52-54
h. 1909 - 1918		55-57
i. 1899 - 1908		58-60
j. Before 1899		61-63
k. Total number of schools (SHOULD EQUAL QUESTION 2):		64-66

II. INSPECTION PROGRAM INFORMATION

6. All education agencies have been required by the EPA to inspect all school buildings built before January 1, 1979, to look for friable materials* that may contain asbestos. Has there been or is there scheduled to begin an inspection program for friable materials in your school buildings? (Program may be conducted by school, district, or outside source.)

> *THE DEFINITION OF FRIABLE MATERIALS IS "ANY MATERIAL APPLIED ONTO CEILINGS, WALLS, STRUCTURAL MEMBERS, PIPING, DUCTWORK, ETC., WHICH WHEN DRY MAY BE CRUMBLED, PULVERIZED OR REDUCED TO POWDER BY HAND PRESSURE."

Yes [GO ON TO QUESTION 7] 1
No [SKIP TO QUESTION 55]. 2 67

7. Is the friable material inspection program being conducted by this school (or school district) or is it being conducted by an outside agency? [CIRCLE ONLY ONE CODE]

a. This school (district). 01
b. Outside agency [SPECIFY]: ____________________ 02 68-69

____

8. When was the friable materials inspection program started?

DATE PROGRAM STARTED: ______/______ 70-73
MONTH YEAR

9. Which of the following statements best describes the status of friable materials inspection in your school(s)? [CIRCLE ONLY ONE CODE]

a. The inspection of the school(s) has been completed [SKIP TO QUESTION 11] 01
b. The inspection of the school(s) has begun, but has not been completed [SKIP TO QUESTION 12]. 02 74-75
c. The inspection of the school(s) is scheduled to begin in the future [GO ON TO QUESTION 10] 03

10. On what date is the friable materials inspection of your (schools/school) scheduled to begin?

EXPECTED DATE INSPECTIONS WILL START: ______/______ 76-79
MONTH YEAR

> SKIP QUESTIONS 11 THROUGH 56.

11. When was the friable materials inspection of the school(s) completed?

DATE INSPECTION COMPLETED: ______/______ 80-83
MONTH YEAR

12. When did the friable materials inspection of the school(s) begin?

DATE INSPECTION BEGAN: ________/________ 84-87
MONTH YEAR

13. EPA has an on-going technical assistance program for friable materials inspections that includes a toll-free telephone number, regional technical advisors to assist schools, and written guidelines for schools. Has your agency used any of these resources of the technical assistance program?

Yes [GO ON TO QUESTION 14]. 1
No [SKIP TO QUESTION 15]. 2 88

14. Did the technical assistance program meet your needs?

Yes 1
No. 2 89

15. EPA has provided written guidelines to assist schools in complying with the asbestos rule. These guidelines provide information such as where and how to sample friable materials, where to send samples, notification rules and so on. Please indicate which of the following documents you have, and which of those documents were used as guidelines for your inspections.

Document	Does you have copy?		Did you use for inspection guideline?		
	Yes	No	Yes	No	
a. "Compliance Assistance Guidelines: Friable Asbestos-Containing Materials in Schools; Identification and Notification Rule." (This is a ten-page, typed, loose-leaf handout. The text begins "I. WHO MUST COMPLY"). . .	1	2	1	2	90-91
b. "Asbestos-Containing Material in School Buildings: A Guidance Document, Part I." (This is an orange covered booklet published in 1979.).	1	2	1	2	92-93
c. "Asbestos-Containing Material in School Buildings: A Guidance Document, Part II." (This is an orange covered booklet published in 1979.).	1	2	1	2	94-95
d. "Asbestos-Containing Materials in School Buildings: Guidance for Asbestos Analytical Programs." (This is a black covered booklet published in 1980.)	1	2	1	2	96-97
e. "Guidance for Controlling Friable Asbestos-Containing Materials in Buildings." (This is a blue covered booklet published in 1982.)	1	2	1	2	98-99
f. Other [SPECIFY]: ______________________________ ______________________________	1	2	1	2	100-101

102-103

16. Does this school or district have a completed Form 7730-1, "Inspections for Friable Asbestos-Containing Materials" on file? [CIRCLE ONLY ONE CODE]

Yes [GO ON TO QUESTION 17]. 1
No [SKIP TO QUESTION 18]. 2 104

17. On what date was this Form 7730-1 completed?

DATE FORM 7730-1 COMPLETED: ________/________
MONTH YEAR

105-108

III. INSPECTION RESULTS

The following questions are about the results of the inspections of your school(s). For each question please specify the source of information that you used for your answer. These questions are taken directly for the Form 7730-1. If you have a completed Form 7730-1 on file, please use the form as the source for your information.

18. Please review questions 19 through 24, and indicate which source of information you will use to answer these questions. [CIRCLE ONLY ONE CODE]

Form 7730-1. 01
Other [SPECIFY] ______________________ 02 109-110
____
____

19. [FORM ITEM 2]: How many schools have been inspected for friable materials? [DO NOT INCLUDE SCHOOLS THAT WERE BUILT AFTER DECEMBER 31, 1978]

NUMBER OF SCHOOLS INSPECTED: ______________________ 111-113

20. [FORM ITEM 3]: How many of the inspected schools had friable materials present? [IF NO SCHOOLS HAD FRIABLE MATERIALS PRESENT, CIRCLE "000" AND SKIP QUESTIONS 21 THROUGH 56]

NUMBER OF SCHOOLS
WITH FRIABLE MATERIALS: ______________________ 114-116

None [SKIP QUESTIONS 21 THROUGH 56]. . . 000

21. [FORM ITEM 4]: How many schools with friable materials have had samples analyzed for asbestos content? [IF NO SCHOOLS HAVE HAD SAMPLES ANALYZED FOR ASBESTOS, CIRCLE "000" AND SKIP QUESTIONS 22 THROUGH 55]

NUMBER OF SCHOOLS WITH
SAMPLES ANALYZED FOR ASBESTOS: ______________________________ 117-119

None [SKIP QUESTIONS 22 THROUGH 56]. . . 000

22. [FORM ITEM 5]: How many of the schools had asbestos-containing friable material? [IF NO SCHOOLS HAD ASBESTOS-CONTAINING FRIABLE MATERIAL, CIRCLE "000" AND SKIP TO QUESTION 24]

NUMBER OF SCHOOLS WITH ASBESTOS-
CONTAINING FRIABLE MATERIAL: ______________________________ 120-122

None [SKIP TO QUESTION 27] 000

|02|

23. [FORM ITEM 6]: What was the total area in square feet of all friable asbestos-containing materials found in these schools?

NUMBER OF SQUARE FEET OF ASBESTOS-
CONTAINING FRIABLE MATERIAL FOUND: ____________________ sq. ft. 16-25

24. [FORM ITEM 7]: What is the total number of school employees who regularly work in the schools where asbestos containing materials were found?

TOTAL NUMBER OF EMPLOYEES IN
SCHOOLS WHERE ASBESTOS WAS FOUND: ______________________________ 26-35

25. Of the total number of school employees who regularly work in schools where asbestos-containing friable materials were found, how many are professional staff, how many are custodians, and how many are other nonprofessional staff?

	Number of employees	
a. Number of teachers, administrators and other professional staff.	____________	36-45
b. Number of custodians.	____________	46-55
c. Number of other nonprofessional and support staff . .	____________	56-65
d. Total (SHOULD EQUAL ANSWER TO QUESTION 24).	____________	66-75

26. What is the total number of students enrolled in the school(s) where asbestos-containing friable materials were found?

NUMBER OF STUDENTS ENROLLED: ____________________ 76-85

IV. SAMPLING & ANALYSIS INFORMATION

27. On the average, how many samples of a friable material were taken from each sampling area?

NUMBER OF SAMPLES PER SAMPLING AREA: ________________ 88-90

28. What was the first date that samples were taken?

STARTING DATE OF SAMPLING: ________/________ 91-94
MONTH YEAR

29. What was the last date that samples were taken? [IF SAMPLING IS STILL IN PROCESS, CIRCLE "0000"]

LAST DATE SAMPLES WERE TAKEN: ________/________ 95-98
MONTH YEAR
Still in process. 0000

30. What was the first date that samples were sent to be analyzed? [IF NO SAMPLES HAVE BEEN SENT FOR ANALYSIS, CIRCLE "0000" AND SKIP TO QUESTION 34]

DATE FIRST SAMPLES SENT: ________/________
MONTH YEAR 99-102
No samples sent [SKIP TO QUESTION 34] . 0000

31. What was the last date that samples were sent to be analyzed? [IF ALL SAMPLES HAVE NOT BEEN SENT, CIRCLE "0000"]

DATE LAST SAMPLES SENT: ________/________
MONTH YEAR 103-106
Still in process. 0000

32. What was the first date that you received results from any sample analysis? [IF RESULTS HAVE NOT BEEN RECEIVED, CIRCLE "0000" AND SKIP QUESTIONS 34 THROUGH 56]

DATE FIRST RESULTS RECEIVED: ________/________
MONTH YEAR
No results received [SKIP
QUESTIONS 34 THROUGH 56] 0000 107-110

33. What was the last date that you received results from any sample analysis? [IF ALL RESULTS HAVE NOT BEEN RECEIVED, CIRCLE "0000"]

DATE LAST RESULTS RECEIVED: ________/________
MONTH YEAR 111-114
Still in process. 0000

V. INFORMATION ON SCHOOLS WITH ASBESTOS-CONTAINING FRIABLE MATERIALS

|03|

34. Were asbestos-containing friable materials found in any of your school(s)?

Yes [GO ON TO QUESTION 35]. 1
No [SKIP QUESTIONS 35 THROUGH 56] 2 16

35. How many of the schools that were found to have asbestos-containing friable material were built during the following decades? [IF A SCHOOL USES BUILDINGS OR PARTS OF BUILDINGS THAT WERE BUILT IN DIFFERENT DECADES, PLEASE CLASSIFY THE SCHOOL ACCORDING TO THE OLDEST STRUCTURE RATHER THAN THE NEWEST STRUCTURE]

DECADE	NUMBER OF SCHOOLS	
a. 1979 - 1983		17-19
b. 1969 - 1978		20-22
c. 1959 - 1968		23-25
d. 1949 - 1958		26-28
e. 1939 - 1948		29-31
f. 1929 - 1938		32-34
g. 1919 - 1928		35-37
h. 1909 - 1918		38-40
i. 1899 - 1908		41-43
j. Before 1899		44-46
k. Total number of schools (SHOULD EQUAL ANSWER TO QUESTION 22):		47-49

What percentage of the total amount of asbestos-containing friable material found in (all) your school(s) was from other than pipe or duct insulation? (for instance, from ceilings and walls)

_____ percent

36. In how many of the schools where asbestos was found was notice concerning the presence of asbestos provided to the school employees? [IF THERE ARE NO SCHOOLS WHERE EMPLOYEES HAVE BEEN NOTIFIED, CIRCLE "000" AND SKIP TO QUESTION 39]

NUMBER OF SCHOOLS WHERE
EMPLOYEES HAVE BEEN NOTIFIED: ______________________ 50-52

None [SKIP TO QUESTION 39]. . . . 000

37. Was notice to these employees provided using EPA Form 7730-3 or by some other method? [CIRCLE ONLY ONE CODE]

a. EPA Form 7730-3 01
b. Other [SPECIFY]: ______________________ 02
______________________________ 53-54
____

38. What was the first date that notice was provided to any school employees?

DATE OF FIRST
EMPLOYEE NOTIFICATION: ______/______ 55-58
MONTH YEAR

39. In how many of the schools where asbestos was found was notice concerning the presence of asbestos provided to the Parent/Teacher's Association? [IF THERE ARE NO SCHOOLS WHERE THE PARENT/TEACHER'S ASSOCIATION HAS BEEN NOTIFIED, CIRCLE "000" AND SKIP TO QUESTION 42]

NUMBER OF SCHOOLS WHERE
P.T.A. HAS BEEN NOTIFIED: ______________________ 59-61

None [SKIP TO QUESTION 42] . . 000

40. How was notice provided to the Parent/Teacher's Association(s)?

______________________________________ 62-63
____

41. What was the first date that notice was provided to the Parent/Teacher's Association?

DATE OF FIRST P.T.A. NOTIFICATION: ______/______ 64-67
MONTH YEAR

SKIP TO Q45

42. In how many of the schools where asbestos was found was notice of the presence of asbestos sent to the parents of the students attending the school? [IF THERE ARE NO SCHOOLS WHERE NOTICE HAS BEEN SENT TO PARENTS, CIRCLE "000" AND SKIP TO QUESTION 45]

NUMBER OF SCHOOLS WHERE
PARENTS WERE NOTIFIED: ______________________________ 68-70

None [SKIP TO QUESTION 45] 000

43. How was notice provided to the parents of the students attending the school(s)?

____ 71-72

____

44. What was the first date that notice was provided to the parents of the students attending the school(s)?

DATE OF FIRST PARENT NOTIFICATION: ______/______ 73-76
MONTH YEAR

The following questions are about abatement work in the school(s) where asbestos was found. There are four basic types of abatement. First is removal of all friable material containing asbestos. Second is enclosure of the material with an air-tight, impact resistant barrier. Third is encapsulation of the friable material by the use of a sealant. And fourth is special operations and maintenance procedures and periodic reassessment which can be used to monitor the building for the need for other abatement activities.

45. Is any abatement work planned, on-going, or completed in the school(s) where asbestos was found? [CIRCLE ONLY ONE CODE]

Yes [GO ON TO QUESTION 46]. 1
No [SKIP QUESTIONS 46 THROUGH 56] 2 77

46. In the table below, please indicate the number of schools where all asbestos abatement work has been completed, the number of schools where abatement work is currently being done, and the number of schools where abatement work is scheduled for the future.

	Number of schools	
a. Number of schools in which all asbestos abatement work has been completed....................	________________	78-80
b. Number of schools in which abatement work is currently being done..............................	________________	81-83
c. Number of schools in which abatement work is scheduled to begin in the future..................	________________	84-86
d. Total number of schools where abatement work has been or will be done (should equal the sum of a, b, and c, above)................	________________	88-90

|04|

47. Does your school or district use removal as a method of asbestos abatement? [CIRCLE ONLY ONE CODE]

Yes [GO ON TO QUESTION 48]. 1
No [SKIP TO QUESTION 49]. 2 16

48. In Column A of the table below, please indicate the number of schools in which the removal of asbestos-containing friable materials has been completed, the number of schools in which removal is currently being done, and the number in which removal work is planned to begin in the future. In Column B, enter the total number of square feet of friable material involved, and in Column C, enter the cost per square foot for the removal of the material. In Column D, for future work only, indicate when the work will begin.

	A. Number of schools	B. Total number of square feet	C. Cost per square foot	D. When will work begin? [CIRCLE ONE]	
a. Removal work that has been completed	(schools)	(sq. ft.)	$ (per sq. ft.)		17-39
b. Removal work that is currently being done	(schools)	(sq. ft.)	$ (per sq. ft.)		40-62
c. Removal work that is planned for the future	(schools)	(sq. ft.)	$ (per sq. ft.)	Less than 3 mos........ 1 3-6 mos........ 2 7-12 mos....... 3 More than 12 mos....... 4	63-86

49. Does your school or district use enclosure as a method of asbestos abatement? [CIRCLE ONLY ONE CODE] |05|

Yes [GO ON TO QUESTION 50]. 1
No [SKIP TO QUESTION 51]. 2 16

50. In Column A of the table below, please indicate the number of schools in which the enclosure of asbestos-containing friable materials has been completed, the number of schools in which enclosure is currently being done, and the number in which enclosure work is planned to begin in the future. In Column B, enter the total number of square feet of friable material involved, and in Column C, enter the cost per square foot for the enclosure of the material. In Column D, for future work only, indicate when the work will begin.

	A. Number of schools	B. Total number of square feet	C. Cost per square foot	D. When will work begin? [CIRCLE ONE]	
a. Enclosure work that has been completed	______ (schools)	______ (sq. ft.)	$______ (per sq. ft.)	▨	17-39
b. Enclosure work that is currently being done	______ (schools)	______ (sq. ft.)	$______ (per sq. ft.)	▨	40-62
c. Enclosure work that is planned for the future	______ (schools)	______ (sq. ft.)	$______ (per sq. ft.)	Less than 3 mos........ 1 3-6 mos........ 2 7-12 mos....... 3 More than 12 mos....... 4	63-86

06

51. Does your school or district use encapsulation as a method of asbestos abatement? [CIRCLE ONLY ONE CODE]

Yes [GO ON TO QUESTION 52]. 1
No [SKIP TO QUESTION 53]. 2 16

52. In Column A of the table below, please indicate the number of schools in which the encapsulation of asbestos-containing friable materials has been completed, the number of schools in which encapsulation is currently being done, and the number in which encapsulation work is planned to begin in the future. In Column B, enter the total number of square feet of friable material involved, and in Column C, enter the cost per square foot for the encapsulation of the material. In Column D, for future work only, indicate when the work will begin.

	A. Number of schools	B. Total number of square feet	C. Cost per square foot	D. When will work begin? [CIRCLE ONE]	
a. Encapsulation work that has been completed	______ (schools)	______ (sq. ft.)	$______ (per sq. ft.)	▨	17-39
b. Encapsulation work that is currently being done	______ (schools)	______ (sq. ft.)	$______ (per sq. ft.)	▨	40-62
c. Encapsulation work that is planned for the future	______ (schools)	______ (sq. ft.)	$______ (per sq. ft.)	Less than 3 mos....... 1 3-6 mos....... 2 7-12 mos...... 3 More than 12 mos...... 4	63-86

|07|

53. Does your school or district use special operations and maintenance procedures and periodic reassessment (operations/maintenance/reassessment) as a method of asbestos abatement? [CIRCLE ONLY ONE CODE]

Yes [GO ON TO QUESTION 54]. 1
No [SKIP QUESTIONS 54 THROUGH 56] 2 16

54. In Column A of the table below, please indicate the number of schools in which the operations/maintenance/reassessment of asbestos-containing friable materials has been completed, the number of schools in which operations/maintenance/reassessment is currently being done, and the number in which operations/maintenance/reassessment work is planned to begin in the future. In Column B, enter the total number of square feet of friable material involved. In Column C, for future work only, indicate when the work will begin.

	A. Number of schools	B. Total number of square feet	C. When will work begin? [CIRCLE ONE]	
a. Operations/maintenance/reassessment work that has been completed	______ (schools)	______ (sq. ft.)		17-29
b. Operations/maintenance/reassessment work that is currently being done	______ (schools)	______ (sq. ft.)		40-52
c. Operations/maintenance/reassessment work that is planned for the future	______ (schools)	______ (sq. ft.)	Less than 3 mos.......... 1 3-6 mos.................. 2 7-12 mos................. 3 More than 12 mos......... 4	63-75 86

SKIP QUESTIONS 55 AND 56.

55. Some schools or districts are exempted from parts of the Asbestos-in-Schools Rule. Do any of the following exemptions apply to these school(s). [CIRCLE ONE CODE FOR EACH ITEM]

	Yes	No	
a. These school(s) were inspected, sampled, and analyzed prior to the effective date of the Asbestos-in-Schools Rule.	1	2	87
b. These school(s) can document that no friable asbestos-containing building materials were used in construction, modification, or renovation.	1	2	88
c. Abatement programs in these school(s) have resulted in the elimination of all friable asbestos materials from the school(s) either by removal or by encapsulation.	1	2	89
d. Other [SPECIFY]: ______________________________	1	2	90
______________________________			
______________________________			

91-92

56. Are there any other reasons that these school(s) have not been inspected for asbestos-containing friable materials?

____

____

____

93-94

APPENDIX C

INTERVIEWER PROCEDURES MANUAL

ASBESTOS-IN-SCHOOLS
INTERVIEWER PROCEDURES MANUAL

Prepared by:

Westat, Inc.
December 12, 1983

TABLE OF CONTENTS

Chapter		Page
1	INTRODUCTION TO EPA ASBESTOS-IN-SCHOOLS STUDY	1-1
2	CONTACT/NONCONTACT PROCEDURES	2-1
3	SPECIAL PROCEDURES	3-1
4	QUESTION-BY-QUESTION SPECIFICATIONS FOR QUESTIONNAIRE	4-1
Appendix		
A	EPA ASBESTOS-IN-SCHOOLS OFFICIAL FORMS ...	A-1

Preceding page blank

1. INTRODUCTION TO EPA ASBESTOS-IN-SCHOOLS STUDY

1.1 Overview of Study

The Environmental Protection Agency, in an effort to protect school children from the risks associated with exposure to airborne asbestos particles, put into operation the Asbestos-in-Schools Identification and Notification Rule in 1982. This rule required all schools, public and private, to inspect for friable asbestos. (These are materials which when dry can be crumbled and pulverized by hand and contain particles of asbestos.) The schools and/or school districts were then required to post results of the inspection for employees and parents if asbestos was found.

Regardless of the findings of the inspection, an inspection report on EPA form 7730-1 (Appendix A) was required to be kept on file at the district or school office.

Westat is conducting a survey for EPA to determine (1) the extent of compliance with the inspection and notification rule, (2) results of the inspections, and (3) numbers of school employees and pupils exposed to asbestos.

1.2 Sample

The sample of local education agencies to be called in this survey has been selected from listings of all public school systems, archdioscesan Catholic school systems and non-Catholic private schools. You will be calling administrative offices of public and Catholic school systems and the principals' offices of private schools.

1.3 Overview of Interviewers' Tasks

For the questionnaire phase of the study the interviewers will:

- Receive assignments consisting of:
  - A Call Record with a Westat ID;
  - A Respondent Information Sheet with the name of the local educational agency (LEA), the name of the school superintendent or principal, the address and telephone number of the LEA and, in some cases, the name and number of the individual responsible for the asbestos inspection; and
  - A Main Questionnaire.
- Call the number of the LEA and locate the person responsible for the asbestos inspection.
- Administer the questionnaire when the person is located.
- Call back if respondent needs time to locate the questionnaire.
- Record results of all telephone calls.
- Edit all completed survey materials.

1.4 Overview of Survey Materials

All materials used in the study will be briefly described here. They will be analyzed fully in the procedures sections and copies can be found in the appendices.

Letter and Questionnaire. Approximately two weeks before the questionnaiare is administered by telephone, a letter and questionnaire will be sent to the superintendent or school principal. The questionnaire is identical to the telephone questionnaire, except for the handwritten checks and introduction. The respondent should fill out the questionnaire in order to be prepared for the telephone interview. We are enclosing in the package a card to be returned to Westat with the name and number of the person responsible for the asbestos inspection. If this card is returned, the computer will print the name on the Respondent Information Sheet.

Respondent Information Sheet. This is a computer generated sheet listing the respondent's Westat ID, name of LEA (school or school district), address, the telephone number of LEA, and the superindent or principal's name. If the information has been returned from the respondent, the name of the person responsible for asbestos inspections will be listed on the first line of referrals.

Call Record. This form is used to record each attempt you make to contact the respondent as well as the results of that attempt. If you receive a reassignment, the Record also will show information about previous efforts to call the repondent. There are only two preprinted items on the Call Record of concern to the interviewer: (1) the Westat ID, which must match the ID on the Respondent Information Sheet; and (2) the File Name, which will include the time zone of the respondent.

Main Questionnaire. This booklet contains the questions to be asked of each respondent.

Non-Interview Report Form. This form is filled out when the superindent, principal, or contact person refused to answer any questions on the interview or when you feel you have exhausted the possibilities in locating a respondent.

ID Labels. These labels will list the name of the LEA and Westat ID. These labels will be affixed to the quetionnaire.

2. CONTACT/NONCONTACT PROCEDURES

2.1 Introduction

Keeping a record of the result of every phone call you make for each case is an important part of the research process. By doing so, we will know how to treat each case according to its needs, and maintain a record of the productivity of the survey. The record-keeping for the EPA Asbestos-in-Schools Study will be done by the use of a computer management system. The computer will provide the initial work assignments, and once acceptable status codes have been acquired, we will code these status codes into the computer. This enables us to keep a record of all finalized cases. The receipt control staff will monitor the needs of the active cases (those that require additional calls or special handling).

The procedures you will follow and the codes you will use for this survey are discussed in this chapter.

2.2 Respondent Information Sheet (RIS)

There will be one RIS for each school. This RIS will provide you with basic information about the school (see Exhibit 2-1). The RIS will have the following information:

- Westat ID number;
- School name, address, city and state;
- School telephone number;
- Respondent name; and
- Place to record new respondent name and telephone number.

Preceding page blank

Reproduced from best available copy.

EXHIBIT 2-1

EPA TASK15

RESPONDENT INFORMATION SHEET

WESTAT ID: 100001-7

SCHOOL: ALLEN SCHOOL

ADDRESS: 2200 CENTRAL AVENUE

CITY: ALLENTOWN STATE: PA ZIP: 18105

TELEPHONE: 2159875512

CONTACT: JACK JONES

NEW CONTACTS: ------------------ NEW PHONE NUMBERS: ------------------

COMMENTS: --

The RIS will be stapled to the inside cover of the folder.

2.3 The Call Record

The Call Record (see Exhibit 2-2) is a computer-generated form that has a two-fold purpose: (1) it serves as your work assignment by providing information you will need regarding the school that you are to call; and (2) it is the only means by which you communicate the status of each school you call and finalize. One call record will be generated for each school that you are to contact. You should use this call record to keep an account of the calls that have been made.

After you contact or attempt to contact a school, you must record the result on the call record. Since the call record is produced in duplicate in computer readable type style, you should fill out the necessary information on the top sheet, being careful not to make extraneous marks on the paper. The attached call record copy is pressure sensitive, and anything written or pressed onto the top sheet will be reflected on the copies.

Below is an explanation of each item on the call record:

- File Key - The file key is a unique number that is given to each case
- Previous Disposition - This will be blank unless a code "2" or "9" has been previously assigned (codes are discussed in Section 2.4.
- Total Calls - This space will be blank until computer updating has occurred.

CALL RECORD

FILE KEY:

PREVIOUS DISPOSITION:

TOTAL CALLS:

FILE NAME:

TELEPHONE:

APP DATE/TIME:

	INTERVIEWER INITIALS	DATE	TIME BEGUN	TIME ENDED	RESULTS	COMMENTS	CALL BACK INFO. DATE TIME	D/E/W
+0001.8								
+0002.6								
+0003.4								
+0004.2								
+0005.9								
+0006.7								
+0007.5								
+0008.3								
+0009.1								
+0010.9								

+49320	(1)	RING NO ANSWER
+50328	(2)	FIRST REFUSAL/BREAKOFF
+51326	(3)	BUSY
+52324	(4)	CALLBACK – NO APPT.
+53322	(5)	CALLBACK – APPT.
+54320	(6)	INITIAL LANG. PROB.
+55327	(7)	PROJECT SPECIFIC CODE
+56325	(8)	PROBLEM (Specify)
+57323	(9)	MAILOUT NEEDED
+49486	(10)	TRACING NEEDED

+67322	(C)	COMPLETE
+80671	(PC)	PARTIAL COMPLETE
+73320	(I)	INELIGIBLE
+79657	(OA)	OUT OF AREA
+82669	(RB)	FINAL REFUSAL/BREAKOFF
+76802	(LP)	FINAL LANGUAGE PROBLEM
+79327	(O)	OTHER
+78824	(NR)	NON RESIDENTIAL
+78659	(NA)	NO ANSWER
+78873	(NW)	NON WORKING
+78766	(NL)	NOT LOCATABLE
+83493	(S1)	SPECIFIC 1
+83501	(S2)	SPECIFIC 2
+77677	(MC)	MAXIMUM CONTACT

CASE ID

INT. CODE

- File Name - This will tell you the name of the file in the computer for this study.

- Telephone Number - This space will be blank for this study.

- Appointment Date/Time - This space will be blank for this study.

- Interviewer Name - You should record your first initial and last name in this space for every contact or attempt to contact that you make.

- Date - Record the month and date of every contact or attempt to contact, e.g., 12/15.

- Time Began - Record the time you called or attempted to call, and indicate a.m. or p.m., e.g., 2:45 p.m.

- Time Ended - Record the time you ended the call, and indicate a.m. or p.m. If the call does not result in a contact, put a dash (-) in this space.

- Result - Record the result code of the call/interview by using one of the codes listed in the result codes section of the call record. Result codes will be further discussed in Section 2.4.

- Comments - Record any pertinent comments or notes regarding the case in this space. These should include any relevant information about the respondent, the telephone number, or the interview, etc. Limit your comments to one line, if possible. However, if you feel additional explanation is necessary, attach a note to the call record. The note should have the ID number of the case, the date, and your initials.

- Callback Information - If a specific appointment is made with a respondent to complete the interview, record that information in this space. Record the month and date (12/15) and the time (6:30 p.m.). Always record the time first in the respondent's time and convert it to Westat time outside the box. Please designate the conversion by indicating E.S.T., C.S.T., M.S.T., or P.S.T.

- D.E.W. - This space should not be used on this study.

- Case ID Number - An ID number for the case will be preprinted in this space.
- Interview Code - You will be given a set of computerized labels that contain your initials and your code. Whenever you finalize a case, you should affix one label in this space. Codes C, PC, RB, O, S1 and 2 receive your interviewer label.

2.4 Result Codes

Only project specific codes are discussed in this section.

2.4.1 Interim Codes

All interim codes are to be recorded as numbers. They are used only when the outcome of the contacts do not result in a final disposition. Interim codes are defined below:

(1) No Answer - Code "1" on the call record when no one answers the telephone when you call. It is important that you let the telephone ring no more than six times. This should allow sufficient time for someone to answer.

(2) First Refusal/Breakoff - Code "2" if the respondent refuses to participate or begins the interview but stops or breaks off before completing it. If you receive a particularly strong first refusal and feel that the number should not be called again, note this in the Comments section column but do not assign the final refusal code. Only the supervisor may assign the final refusal code.

(3) Busy Signal - Code "3" on the call record when the number you call is busy. If you get a busy signal, someone is usually at the number, so try again in 10 minutes. All busy signals should be attempted twice during your shift.

(4) Callback - No Appointment - Code "4" on the call record when you call a number but cannot complete the interview and the person you talk to does not give you a specific time or day to call back. You may use this code when you have completed part of the interview but must call back to complete the remainder. If the respondent prefers to be called back at an unspecific time of day (e.g., early a.m.), note this in the comments. Note: A code "5" (discussed next) is always preferable to a Code "4".

(5) Callback - Appointment - Code "5" on the call record when you call a number and receive a specific day and time to call back to talk to a respondent (e.g., Monday at 10:30 a.m., Wednesday at 5:00 p.m., etc.). Remember to convert the appointment to Westat time in the right hand margin and designate E.D.T./E.S.T.

Whenever a "5" is recorded, information must be written in the comment and callback information space of the call record. You will use this code when the questionnaire is not complete and you obtain a specific time to call back to complete the remainder.

(6) Initial Language Problem - This code will not be used.

(7) New Respondent Identified - Code "7" when the original respondent on the RIS has been contacted and has referred you to a more knowledgeable person. Code "7" is also used when original respondent is unavailable but person answering the telephone makes a referral to asbestos person. When this code is used, the name of the new respondent must be added to the referral list on the RIS. Code "7" is used when the new respondent has been identified but the interview has not been completed. This code can be used with Codes "4" and "5".

(8) Problem - Code "8" if you encounter any situation that would require the attention of a supervisor before a callback is made and no other code is appropriate. When you use this code, provide a description of the problem in the comments column. Use this code if you suspect a school is closed but you cannot find confirmation. Always have a supervisor initial a Code "8" before turning in your work.

(9) Mailout Requested - Code "9" for schools who want another copy of the original letter or additional information on the study. Put details in comments column.

(10) Tracing - This code will not be used.

2.4.2 Final Codes

Final result codes are all represented by letters. Do not assign any final result codes, except completions, without first discussing the file with your supervisor. Final codes are defined as follows:

(C) Complete - Code "C" on the call record when you have completed the entire interview for the school. A complete means all pertinent questions have been answered by an appropriate respondent.

(PC) Partial Response - "PC's" will only be assigned by supervisors unless otherwise specified.

(RB) Final Refusal - Code "RB" if the attempt made to convert an original refusal is met with a refusal. Only a superintendent or principal can issue a final refusal. A supervisor will assign this code.

(I) Ineligible - This code will not be used.

(OA) Out of Area - This code will not be used.

(LP) Language Problem - This code will not be used.

(O) Other - This code will be assigned by a supervisor. This code is used only when none of the other final codes apply. If you feel this is the appropriate code, specify reasons in Comments column and discuss the case with your supervisor.

(NR) Non-residential - This code will not be used.

(NA) No Answer - This code will not be used.

(NW) Non Working - This code will not be used.

(NL) Not Locatable - This code will not be used.

(S1) School Closed - If it is determined that the school is no longer in operation, Code S1. If the telephone number is no longer a working number or there is no answer at that number, use interim code "8" and refer to your supervisor.

(S2) This code will not be used.

(MC) Code "MC" will be assigned by a supervisor after the school has been contacted and you have not been able to complete the interview after nine attempts.

2.5 Receiving Assignments

All assignments will be available in files designated by Time Zone and type of assignment.

- New Work - Folders containing Call Records, Respondent Information Sheets (RIS), and questionnaires for respondents never called.
- Appointments - Folders containing Call Records, RIS and questionnaires for previously called respondents with an appointment set up.
- Repeat Calls - Folders for respondents called before, but without a specified time for calling again.

The folders containing the Call Record, RIS and the questionnaire will each bear an ID number. Always check to make sure that the identification numbers are identical. Notify your supervisor if there are any discrepancies.

A supply of Non-Interview Report Forms (NIRF's) will be located in the receipt area; be sure to take a sufficient supply with you before you begin interviewing. Each time you use a NIRF be careful to record the ID number from the Call Record and RIS.

2.5.1 Specific Appointments

These are schools requiring callbacks on specific days at specific times. You will call back at the designated time and conduct the interview.

When setting up appointments to call back, either:

(1) Set up an appointment during your shift; or

(2) Set up an appointment during the hours of operation for this study, which will be Monday through Friday, 9:00 a.m. to 6:00 p.m. Make every effort to set up an appointment within the following week.

If a respondent sets a time that is not within the hours of operation, you should explain to him/her that because of our hours, it will not be possible to call back at that time. If the respondent insists on a time not within our hours of operation, you must bring the case to the attention of your supervisor immediately.

Since you will be calling in other time zones, use the table below to decide when you can make appointments. Always record the appointment time in Westat time.

	No Appointments Before	No Appointments After
Eastern	9:00 a.m.	6:00 p.m.
Central	8:00 a.m.	5:00 p.m.
Mountain	7:00 a.m.	4:00 p.m.
Pacific	6:00 a.m.	3:00 p.m.

Below is a list of circumstances where an appointment is the appropriate response:

- The knowledgeable respondent has been identified but is not available;
- The "asbestos person" is not identified and the superintendent/principal is not available; or
- The "asbestos person" is contacted but is not prepared or not available for interview at that moment.

2.5.2 Special Assignments

Special assignments consist of schools that require specialized treatment. These assignments are:

- Code 2 - If the contact person is not the school superintendent or principal, he or she cannot provide the final refusal. If the contact person refused to complete the questionnaire, a callback to the principal/superintendent will be made. These calls as well as recalls to the principal/superintendent to convert his/her original refusal to comply will be handled by specially trained interviewers.

- Code 8 - When this code is used it indicates some question about a school's continued existence. With Code "8's" directory assistance must be called to ascertain if the telephone number is still listed. If this does not clarify a school's status, specially trained personnel will do some tracing.

2.6 Preparing for Interview

Before calling a respondent for whom you (or another interviewer) have already made a previous attempt, review the Call Record and the RIS for any notes made on previous tries. They will give you clues on when and how to make your next attempt.

2.7 Quality Control

Before you return your work, you shoulld review everything you have recorded. This editing process is critical to every research project. Editing should be done in blue pencil. When you finish editing, put your initials in the top right hand corner of the questionnaire. If these initials are missing, the call record and questionnaire will be returned to you for editing.

In addition to your editing process, the receipt control staff will scan your work to make sure everything is coded properly.

2.9 Data Retrieval

In addition to your editing process the receipt control staff will scan your work. If an error or inconsistency is found, the questionnaire will be returned to your for data retrieval. A Data Retrieval Form will designate the problem and where it occurs. You will call to resolve the problem. Record the resolution, make the necessary changes in the questionnaire and record the result of the data retrieval call at the bottom of the form. Do not record the result of the data retrieval call(s) on the call record.

2.9 Receiving and Returning Work

A location within the Telephone Center will be designated as the receipt area for this study. When you begin your shift you will take work in the following order:

(1) Appointments
(2) Old Work
(3) New Work

All assignments should be sorted appropriately into the following results:

(1) Interim
(2) Finalized
(3) Problems

3. SPECIAL PROCEDURES

3.1 Answering Respondents' Questions

Although a letter has been sent to the LEA explaining the study and outlining the information required on the questionnaire, some respondents will have questions. The questions may not be phrased the same way they are written in this manual. It is important that you listen carefully to the respondent's question, understand the point of the question and respond briefly and directly to that point. Should you be asked a question you cannot answer, admit that you don't know the answer. If the respondent wishes, arrange for the respondent to speak with your supervisor. Similarly, if you are asked a question that, if answered, would likely lead to a refusal, refer the person to your supervisor rather than attempting to answer the question yourself.

- Whom do you work for? I work for Westat, a survey research firm, which is under contract to the Environmental Protection Agency.
- Why is the study being done? The Environmental Protection Agency is trying to find out the effects of the Asbestos Inspection and Notification Rule and the extent of the asbestos problem.
- Are all schools being contacted? No, a sample of all schools will be contacted.
- Do I have to answer these questions? This is a voluntary study, but your answers will provide needed information for the EPA.
- How long will this interview take? If you have the EPA Form 7730-1 with the results of your inspection, it should take no more than 15 minutes.

Preceding page blank

- Is this information confidential? Yes. This information will be used for research purposes only. It is not part of EPA's monitoring and enforcement effort.

3.2 Study Verification

If a respondent wants to verify the legitimacy of the study she or he may use Westat's toll-free 800 number. Whenever the respondent expresses a wish to call, give him/her:

- Your name
- Your supervisor's name
- Westat's name
- The name of the survey: EPA Asbestos in Schools Study.
- The toll-free number: (800)638-8985.

When a respondent wants to call for verification of the study, suggest to the respondent that he/she call Westat during your shift. There will be a supervisor available to answer questions during every shift. Please remember to inform the supervisor that someone may be calling.

If a respondent wishes to verify the legitimacy of the survey before answering, attempt to set up an appointment to complete the questionnaire after the verification. In most instances two days should be enough time to verify the study.

3.3 Potential Problems

3.3.1 Telephone Number Problems

If the telephone number on the call record turns out to be a non-working number, a wrong number, or a ring-no-answer, consult the information operator to obtain the correct number of the LEA. If there is no number available for the LEA, note that in the comments column of the call record and refer the file to your supervisor.

3.3.2 Problem Identifying the Person Responsible for Asbestos Inspections

If the person answering the phone does not know who is responsible, ask to speak to the principal or the superintendent. The principal/superintendent is ultimately responsible for the asbestos inspection. If no one else is identified as more knowledgeable, administer the questionnaire to him/her.

3.3.3 School Problems

In the section on interim final results, we discussed the situation of a school closing. If you can determine definitely from the telephone call that the school is no longer in operation, note that in the comments section and Code S1 in the final result column. If you suspect that the school is closed, but you cannot confirm it, Code 08 interim result and refer it to your supervisor.

3.3.4 Refusal

The principal/superintendent is the only person who can refuse. You may be told that the LEA did not conduct the inspection and so has no asbestos information about the asbestos situation. You should explain that EPA wants to know that, too. Every LEA is qualified to participate in the survey regardless of what is known about asbestos in the school(s).

3.3.5 Information Not Available

If the respondent cannot provide the information required, ask if he or she can locate the information for a callback appointment. If not, take what is available. Lack of information is not grounds for a refusal.

3.3.6 Information Not Complete

If the respondent can provide only part of the information at this time, complete the interview and ask the respondent to make note of the items still needed. If this information can be made available later make an appointment to callback. Note this in comments column.

3.3 Potential Problems

3.3.1 Telephone Number Problems

If the telephone number on the call record turns out to be a non-working number, a wrong number, or a ring-no-answer, consult the information operator to obtain the correct number of the LEA. If there is no number available for the LEA, note that in the comments column of the call record and refer the file to your supervisor.

3.3.2 Problem Identifying the Person Responsible for Asbestos Inspections

If the person answering the phone does not know who is responsible, ask to speak to the principal or the superintendent. The principal/superintendent is ultimately responsible for the asbestos inspection. If no one else is identified as more knowledgeable, administer the questionnaire to him/her.

3.3.3 School Problems

In the section on interim final results, we discussed the situation of a school closing. If you can determine definitely from the telephone call that the school is no longer in operation, note that in the comments section and Code S1 in the final result column. If you suspect that the school is closed, but you cannot confirm it, Code 08 interim result and refer it to your supervisor.

GLOSSARY

Asbestos -	A group of naturally occurring minerals that separate into fibers, used commercially as fire-proof insulation.
Encapsulation -	Abatement measure in which the asbestos material is coated with a bonding agent called a sealant. The sealant prevents fiber release from the asbestos material.
Exposure (human) -	The presence of people in an area where levels of an airborne contaminant are elevated.
Exposure (material) -	The amount or fraction of material visible.
Enclosure -	Abatement measure in which a barrier such as a suspended ceiling is constructed between the asbestos material and the building environment.
Friable -	Capable of being crumbled, pulverized or reduced to powder by hand pressure.
Operations maintenance or deferred action -	No abatement action is taken; the area is inspected periodically for changes in exposure potential.
LEA -	Local educational agency. This is an educational unit consisting of all the schools in a school district in the case of public and parochial schools, and of a single school in the case of independent schools.
Removal -	This is an abatement measure in which the friable asbestos containing material is removed from the building and buried.

3.4 Conducting the Interview

As described earlier, the data collection you will be performing for this study is actually not "interviewing." Rather than reading question and recording responses, you will record the answers the respondent has already prepared. It is important that you observe the following techniques for this special form of data collection:

1. Question Referencing: For the most part, it will not be necessary to read questions to the respondent, but refer to them by question number and letter. The questionnaire copies you will be using are annotated and highlighted to help you collect information in this manner. It will be your responsiblity to convey to the respondent the pace and order in which you will receive and record this information.

2. Verify Responses: As necessary, verify the response you receive, especially numerical data and technical descriptions.

3. Interviewer Consistency Checks: During the recording process, perform the "checks" which have been added to the question margins. In the event that the information the respondent provides "fails" one of those checks, you will need to probe for clarification.

4. Answering Respondent Questions: The respondent may have questions about certain questionnaire items, or his/her responses may indicate to you that he/she does not understand the intent of the question. In such instances, you should take one of the following actions, as appropriate:

    - If the respondent's question involves a definition in your Glossary or a matter of questionnaire usage, you should attempt to answer this question and proceed with data recording.

    - If the respondent's question is of a more technical nature which could affect the way the remainder of the questionnaire is completed, you should ask your supervisor for assistance.

4. QUESTION-BY-QUESTION SPECIFICATIONS FOR QUESTIONNAIRE

QUESTION 1. In this question we want to know if this is an independent school, i.e., only one school in the district or a school which is part of a school system, either public or Catholic. If it is part of a school district, we want to know the size of the district in number of schools. If you are speaking with one school in a district, get the telephone number of the district office and END.

QUESTION 2. This question refers to schools, not buildings.

QUESTION 3. In this item, record the number of students in the school if it is an independent school, or the number of students in the school system if it is a district office. This number includes only the number of regularly enrolled students in the school. It should not include the students enrolled in night classes or after hours continuing education classes.

QUESTION 4. Asbestos was not used in any school construction after January 1, 1979. If any part of the school(s) in question was built before that date, answer YES and continue the interview.

QUESTION 5. We are interested in schools here, not school buildings. Use oldest construction date.

QUESTION 6. If the school/district has not done an inspection we are interested in any plans for a future inspection. Try to get a clear yes or no answer. If the answer is no, END.

QUESTION 7. An outside agency such as the state may be responsible or the inspection program. Obtain all information necessary in case we want to call that agency.

QUESTION 8. This question is looking for the date of the first inspection of the first school in the district. The EPA rule was issued in 1981, but there was a voluntary regulation before that. We want to know the date, to place the inspection in the voluntary or mandatory period.

QUESTION 13. This item will identify those LEA's which actually called EPA for assistance. If the respondent doesn't know if any calls were made, record DK.

QUESTION 14. The response to this item will be used to measure consumer satisfaction with the technical assistance program.

QUESTION 15. This item is asking which of the documents they actually have. It is different from the question asking which they used.

The second question is asking which document or documents were actually used. If the LEA used something other than the documents listed be sure to record a description of the document in the space provided.

QUESTION 16. Form 7730-1 is the document that the EPA rule requires on file at the school or district office. There are two reasons for asking this question. We want to know first if they filled out this form and second, we want to know if they had it on hand for providing detailed answers to the questionnaire. If the LEA conducted its asbestos inspection during the voluntary period (from 1979 to 1982) they can used EPA form 7710-29 for answering this questionnaire.

QUESTION 17. There is no spot on the 7730-1 form for date. If the respondent has to give an approximate date, write APP beside the date. If the respondent has no idea, write DK on line. If the respondent is using 7710-29, note that with the date.

QUESTION 18. If the respondent does not have a copy of form 7730-1 or 7710-29, we want to know if he has any documentation for his answers. Some possible sources might be annual reports, invoices for abatement services, internal memos, etc. If the respondent is going to estimate all answers, note that also. All written sources should have a date.

In all subsequent questions, the unit of interest is the school. If a school has one or more buildings it is still counted as one school. If a school has building(s) or part of a building built before 1/1/79 that was in use as a school building any time during the 12-month period from 6/82 through 5/83, it is counted in this question as one school.

QUESTIONS 19-24. These questions are taken verbatim from form 7730-1. If the form is available the answers to form item 2-7 should be inserted in these items. If the form is not available, ask the respondent to use whatever materials he has available or to estimate.

QUESTION 25. This is the total from Q.24, broken down into the various types of staff. Custodians should work inside, not outside, the building.

QUESTION 26. This question refers to the total enrollment of an independent school containing asbestos-containing materials. In a district it is the sum of the enrollments of each asbestos-containing material school.

QUESTION 27. This question is not found on form 7730-1. We want to know how they sampled the friable materials when they found them. The orange books and compliance guidelines give different guidelines for sampling.

QUESTION 28. This question is not on the form but might be found on a report of the inspection if the respondent is using other documentation. We are looking for the date of the first sampling of the first building inspected. If the date is estimated, please note it on the same line as the date.

QUESTION 29. See above.

QUESTION 30. The date on this item might be found on a laboratory invoice. If an exact date is not available and the respondent gives an approximate date note it on the line of the date.

QUESTION 31. In this item, if the inspection process is not yet complete record the last date a sample was sent and not on the line provided that the inspection is on-going.

QUESTION 32. Record the date on the first report sent from the laboratory.

QUESTION 33. In this item, record the date of the last report received. If further reports are expected, note that the inspection is on-going.

QUESTION 34. This item is taken from form 7730-1. If the respondent is using another source, remind him that we are asking about schools not school buildings. If several buildings of one school have asbestos containing materials, they are counted as one.

QUESTION 35. Record number of schools next to the time period of first or oldest construction. Refers to schools not buildings.

QUESTION 36. "Notice" in this item means that a form stating asbestos-containing materials were found in a named school is posted in the primary administrative and custodial offices and in the faculty common rooms of all schools found to have asbestos-containing materials.

QUESTION 37. This is a standard form provided by EPA. A copy is included in the appendices.

QUESTION 38. If this date is estimated, please note that.

QUESTION 39. This item refers to a written notice sent to the association not necessarily to individual members.

QUESTION 40. EPA did not provide any form for this notice. Ask for a description of notice materials: letter, memo, copy of inspection form, etc.

QUESTION 41. The date in this item refers to the date of the first notice to the first PTA if more than one was notified.

QUESTION 42. This item refers to some type of notice sent to individual parents. This was not required by the EPA rule.

QUESTIONS 43,44.

If a notice was sent, ask for a description and the date of the first notice.

The remainder of the questions in the interview deal with abatement measures. The EPA is interested in knowing what the action the schools took if they found an asbestos problem. The schools/ districts were not required to do anything beyond posting notice of the problem. However, if they chose to do something about the problem, there are four methods of abatement from which to choose: (1) removal of the friable asbestos; (2) enclosure of the material with an airtight, impact resistent barrier such as suspended ceiling; (3) encapsulation of the friable material by means by a sealant; and (4) special operations and maintenance procedures with periodic reassessment of the buuilding.

QUESTION 48. This is a general question to separate those who have implemented or who will implement abatement procedures and those who will not. If the respondent indicates no abatement done or planned, END.

QUESTION 46. Abatement is completed when all abatement measures are finished in the school. If some measures are complete but others are on-going, count the school in b. If some measures are completed but more work is scheduled, count the school in b. (currently being done)

In schools where more than one method is being used, work is not counted as complete until all methods are complete.

QUESTION 47. If removal is not used, skip the grid (Q.48 which asks about removal).

QUESTION 48. See Q.46. If there is a number in Column A, ask B and C.

QUESTION 49. Enclosure means with an airtight impact resistant barrier.

QUESTION 50. Complete grid as in Q.48.

QUESTION 51. Encapsulation means with a sealant.

QUESTION 52. Complete as in Q.50.

QUESTION 53. Special operations and maintenance procedures includes steps for sealing material which is damaged in construction, for example.

QUESTION 55. There are various reasons why a school or district may be exempted from the rule. Find out why the school or district considers itself exempted.

QUESTION 56. Include in this question any reasons not mentioned above.

APPENDIX D

QA VISIT FIELD MANUAL

March 8, 1984

QA VISIT FIELD MANUAL

EVALUATION OF THE ASBESTOS-IN-SCHOOLS IDENTIFICATION AND NOTIFICATION RULE

Janet Greenblatt
Task Leader

Westat, Inc.
1650 Research Boulevard
Rockville, Maryland 20850

Subcontract No. A-3043(8149)-270

BATTELLE COLUMBUS LABORATORIES
Washington Operations
2030 M Street, N. W.
Washington, D. C. 20036

Contract No. 68-01-6721

Cindy Stroup, Task Manager
Joseph A. Carra, Project Officer
Exposure Evaluation Division
Office of Pesticides and Toxic Substances
U. S. Environmental Protection Agency
Washington, D. C. 20460

Preceding page blank

1. INTRODUCTION TO EPA ASBESTOS-IN-SCHOOLS STUDY

1.1. Overview of Study

The Environmental Protection Agency, in an effort to protect school children from the risks associated with exposure to airborne asbestos particles, put into operation the Asbestos-in-Schools Identification and Notification Rule in 1982. This rule required all schools, public and private, to inspect for friable materials. (These are materials which when dry can be crumbled and pulverized by hand.) The schools and/or school districts were then required to take samples of the friable material, have them analyzed and if asbestos is found, post results of the analyses for employees and parents.

Regardless of the findings of the inspection, an inspection report on EPA form 7730-1 (Appendix A) was required to be kept on file at the district or school office.

Westat is conducting a survey for EPA to determine (1) the extent of compliance with the inspection and notification rule, (2) results of the inspections, and (3) numbers of school employees and pupils exposed to asbestos.

As part of that study a survey of 2,700 schools was conducted by telephone. A quality assurance check in the field on the responses received by telephone and the basis for those responses is being conducted on a limited number of LEA's.

Preceding page blank

EPA ASBESTOS-IN-SCHOOLS RULE REQUIREMENTS

SUMMARY

Respondents: Local Education Agency (LEA)

Date of Rule: May 27, 1982

Date Requirements to be Met: June 28, 1983

1) INSPECT all school buildings for friable materials.

2) SAMPLE all friable materials (at least three samples per homogeneous sampling area).

3) ANALYZE bulk samples by polarized light microscopy (PLM) (done by a laboratory).

4) NOTIFY employees and parents if asbestos is found.

    a. Employees (EPA 7730-3 posted in all teacher's lounges and custodial areas)

    b. Custodians (EPA 7730-2 "Guidelines for Reducing Exposures...")

    c. PTA and Parents (no specific guidance).

5) RECORDKEEPING must be kept at LEA on EPA Form 7730-1. Schools also must have records on where asbestos is located. If no asbestos is found, that must be documented in the LEA's records.

1.2 Sample

The sample of local education agencies which was called in this survey was selected from listings of all public school systems, archdiocesan Catholic school systems and non-Catholic private schools. The Westat telephone center called administrative offices of public and Catholic school systems and the principals' offices of private schools.

1.3 Overview of the QA Monitors' Tasks

The purpose of the site visits is to verify that the information collected during the telephone interviews corresponds to that of the local education agency (LEA) and, in the case of public school districts, of the schools. You will also be validating that the information reported by the LEA about the schools matches the situation at the schools.

When making appointments for the site visits, you may state that you are an employee of the EPA if it works better to obtain access to the schools. You are visiting the LEA and school only to verify the questionnaire, and the visit has no connection to the Compliance Monitoring Inspections conducted by the EPA. Further, all information collected during the visit will be strictly confidential. Their school will not be mentioned in the final report as all information will be aggregated and presented as national figures and estimates.

The QA visits are being conducted in 10 sites.

In each site there will be one visit to each of three types of LEAs:

1. Public school districts;
2. Private Catholic schools; and
3. Private non-Catholic schools.

Within the public school district, a subsample of schools will be visited. (See section on selecting schools.)

Summary of Tasks to be Performed to Complete a Site Visit

Task 1. Advance Phone Call and Visit to LEA:

Before visiting a site, the QA monitor will call the person who answered the questionnaire for an appointment. At that time QA monitors should make it clear that this is a Quality Assurance visit to verify the information on the questionnaire and not part of EPA's Compliance Monitoring Inspections. You should request the contact person prepare for you the following:

1. A list of all schools in the LEA, marking the ones with asbestos-containing friable materials;
2. A xerox of Form 7730-1 or the equivalent used by the school; and
3. The information that was used to respond to the questionnaire should be made available to you when you visit the LEA.

At this time, you should tell them that you will want to walk through approximately 10 percent, but no more than 10, of their schools to verify the inspection results. You could focus on the fact that this is part of a survey they've already done all the work for and it won't take much of their time.

Task 2: Selecting Schools for Inspection:

The contact person at the LEA should provide you with a list of the schools in their school district built before January 1, 1979. You should request that they mark the schools in which asbestos-containing friable materials were found. Ask them to check the schools which have boilers with a different mark or color pen. You should start at the top of the list and select one school which meets each of the following criteria, listed in order of their importance.*

1. Choose one school with no asbestos-containing friable material but with a boiler.
2. Choose one school with asbestos-containing friable material with a boiler.
3. Choose one school with asbestos-containing friable material without a boiler.

When choosing the schools, try to pick at least one high school. Once you have a high school, select an elementary school. Next, try to include one middle school. Selecting the grade span is less important than selecting schools that meet the criteria listed above.

If you should have several schools to choose from in each of the categories shown above, ask the contact person to identify schools which represent a variety of socio-economic areas or which represent special ethnic communities. If it is possible, choose a variety of schools from each type.

---

*It is possible that a school district will not have schools which fall into each category.

Forms 1, 2 and 3 should be filled out when you visit the LEA using the records from their files. If they tell you about an inspection, etc., but have no forms that document it, write down the information but note that it was told to you, by whom, and that there was no written documentation.

Task 3: Walk-through of the Schools:

When visiting a school, first go to the principal's office. Introduce yourself and describe the purpose of the visit. Again, it is important to stress that you are there to verify the results of the survey questionnaire and that you are not a part of the EPA's Compliance Monitoring Inspections. The information you collect will be strictly confidential and will not be turned over to the EPA. Ask the principal to let you see the records they have on file regarding asbestos inspections. You may have to return to the records after the building inspection to verify sampling results. Use Form 5 as a checklist to verify that all proper records are on file.

The purpose of the site visit is to verify the data collected during the telephone interview regarding Inspections, Sampling Analysis, Notifications and Recordkeeping. You should try to include the person who inspected or supervised the inspection during your walk-through.

Inspections

Using the Compliance Assistance Guidelines as a key, you should inspect all areas within all school buildings. The inspection will include looking for and touching all suspect friable materials. You should also look behind suspended ceilings and non-permanent concealed areas. Form 6 contains a list of all areas which should be included in the inspection.

EVALUATION OF THE ASBESTOS-IN-SCHOOLS
IDENTIFICATION AND NOTIFICATION RULE

LEA SUMMARY SHEET

LEA ID: ____________________ INSPECTION DATE: ______________

LEA NAME: __________________ QA MONITOR: ___________________

LEA ADDRESS: ____

____

____

CONTACT NAME: ____

TITLE: ____

TELEPHONE: ____

SUMMARY DATA:

# Schools in LEA ______

# Schools built before 1/1/79 ______

# Schools inspected ______

# Schools with friable materials ______

# Schools with asbestos-containing friable materials ______

Does LEA have FORM 7710-1 on file Yes ____ No ____

EVALUATION OF THE ASBESTOS-IN-SCHOOLS
IDENTIFICATION AND NOTIFICATION RULE

Records Required at Each LEA

	Records on File Yes	 No	Comments
1. A list of all schools under its authority indicating: (a) which were inspected			
(b) which contain friable materials			
(c) which friable materials contain asbestos			
2. For each school in which asbestos-containing friable materials were found: (a) the total area of materials in square feet			
(b) total number of employees who work in the school			
3. Copy of EPA Form 7730-1 (Inspections for Friable Asbestos-Containing Materials)			

ID# ______________________

Name of LEA ______________________

Address ______________________

____

Phone No. (   ) ______________________

Contact Name/Title ______________________

Interviewer ______________________

Date ______________________

U.S. ENVIRONMENTAL PROTECTION AGENCY
ASBESTOS-IN-SCHOOLS IDENTIFICATION AND NOTIFICATION RULE
SITE VISIT INTERVIEW GUIDE

[USE SPACE AFTER QUESTIONS FOR EXPLANATORY NOTES]

1. What type of education agency is this? [CIRCLE ONLY ONE CODE]

a.	Public school district	01
b.	Private school system (made up of two or more schools, administered by this agency.	02
c.	Private school	03
d.	Other [SPECIFY]: ______________________	04

2. If this is a school district or system, how many schools are administered or governed by this system?

NUMBER OF SCHOOLS: ______________________

3. What is the total number of students currently enrolled in your school(s)?

NUMBER OF STUDENTS: ______________________

4. Has there been an inspection program for friable materials in your school building? (Program may be conducted by school, district, or outside source.)

> *THE DEFINITION OF FRIABLE MATERIALS IS "ANY MATERIAL APPLIED ONTO CEILINGS, WALLS, STRUCTURAL MEMBERS, PIPING, DUCTWORK, ETC., WHICH WHEN DRY MAY BE CRUMBLED, PULVERIZED OR REDUCED TO POWDER BY HAND PRESSURE."

Yes [GO ON TO QUESTION 5]. 1
No [SKIP TO QUESTION 22] 2

5. When was the friable material inspection program started?

_______/_______
MONTH YEAR

When did it end (or is it expected to end?)

_______/_______
MONTH YEAR

6. How many schools have been inspected for friable materials? [DO NOT INCLUDE SCHOOLS THAT WERE BUILT AFTER DECEMBER 31, 1978]

NUMBER OF SCHOOLS INSPECTED: ____________________

6A. Did you include boiler insulation and pipe wrapping in your inspection?

Yes 1
No 2

6B. How many schools had this type of friable materials present? __________

Form 3

7. How many of the inspected schools had friable materials present? [IF NO SCHOOLS HAD FRIABLE MATERIALS PRESENT, CIRCLE "000" AND SKIP TO Q19]

NUMBER OF SCHOOLS
WITH FRIABLE MATERIALS: ____________________

None 000

8. How many schools with friable materials have had samples analyzed for asbestos content? [IF NO SCHOOLS HAVE HAD SAMPLES ANALYZED FOR ASBESTOS, CIRCLE "000" AND SKIP TO Q19]

NUMBER OF SCHOOLS WITH
SAMPLES ANALYZED FOR ASBESTOS: ____________________

None. 000

9. How many of the schools had asbestos-containing friable material? [IF NO SCHOOLS HAD ASBESTOS-CONTAINING FRIABLE MATERIAL, CIRCLE "000" AND SKIP TO Q19]

NUMBER OF SCHOOLS WITH ASBESTOS-
CONTAINING FRIABLE MATERIAL: ____________________

None 000

10. What was the total area in square feet of all friable asbestos-containing materials found in these schools excluding pipe wrap and boiler insulation?

NUMBER OF SQUARE FEET OF ASBESTOS-CONTAINING FRIABLE MATERIAL FOUND: ____________________ sq. ft.

11. Were these asbestos-containing materials restricted to pipe wrap, boiler insulation and similar materials?

Yes.	1
No	2

12. Were any of the asbestos-containing materials found on ceilings or walls?

Yes.	1
No	2

13. For the total amount of asbestos containing materials in all schools in the LEA, what percentage was

a. on pipe wrap and boiler insulation __________%

b. on walls and ceilings __________%

100 %

14. In how many of the schools where asbestos was found was notice concerning the presence of asbestos provided to the school employees? [IF THERE ARE NO SCHOOLS WHERE EMPLOYEES HAVE BEEN NOTIFIED, CIRCLE "000" AND SKIP TO QUESTION 15]

NUMBER OF SCHOOLS WHERE
EMPLOYEES HAVE BEEN NOTIFIED: ____________________

None 000

Was notice to these employees provided using EPA Form 7730-3 or by some other method? [CIRCLE ONLY ONE CODE]

a. EPA Form 7730-3. 01
b. Other [SPECIFY]: ______________________________

____

____

[IF NOTICE WAS POSTED, ASK WHERE IN EACH SCHOOL]

Form 3

15. In how many of the schools where asbestos was found did you give custodians a copy of A Guide For Reducing Asbestos Exposure?

NUMBER OF SCHOOLS: ______________________________

None 000

16. In how many of the schools where asbestos was found was notice of the presence of asbestos sent to the parents of the students attending the school (or to the parent/teacher organization)? [IF THERE ARE NO SCHOOLS WHERE NOTICE HAS BEEN PROVIDED TO PARENTS, CIRCLE "000" AND SKIP TO QUESTION 19]

NUMBER OF SCHOOLS WHERE PARENTS WERE NOTIFIED: ______________________________

None 000

NUMBER OF SCHOOLS WHERE PTA'S WERE NOTIFIED: ______________________________

None 000

17. How was notice provided to the parents of the students attending the schools?

____

____

18. What was the first date that notice was provided to the parents of the students attending the school(s)?

DATE OF FIRST PARENT NOTIFICATION: ________/________
MONTH YEAR

19. What records are retained at the LEA to document the findings or absence of asbestos-containing materials? [LIST]

____

____

____

____

____

____

____

____

Form 3

20. Do you have a copy of the 7730-1

Yes.	1	[OBTAIN COPY]
No	2	

21. For the schools in your LEA which have asbestos, please indicate the abatement activities which have been completed, are on going, or are planned. [USE ADDITIONAL PAGES, IF NECESSARY]

____

Type of Abatement	# Schools	Completed	ongoing	Planned
Encapsulation				
Enclosure				
Removal				
Monitoring				

Form 3

22. If the LEA has not inspected for asbestos, please discuss the reasons why not.

23. If the LEA has completed all requirements but notification please indicate why not.

EVALUATION OF THE ASBESTOS-IN-SCHOOLS IDENTIFICATION AND NOTIFICATION RULE

SCHOOL SUMMARY SHEET

LEA ID: ____________________ INSPECTION DATE: __________

LEA NAME: ____________________ QA MONITOR: __________

SCHOOL NAME: ______________________________

SCHOOL ADDRESS: ______________________________

____

____

CONTACT NAME: ______________________________

TITLE: ______________________________

TELEPHONE: ______________________________

	Yes	No
Was the school inspected?		
Did they find friable materials?		
Were samples taken?		
Are lab reports on file?		
Did they find asbestos-containing friable materials?		
Were teachers/custodians notified?		
Was PTA notified?		

FORM 4

EVALUATION OF THE ASBESTOS-IN-SCHOOLS
IDENTIFICATION AND NOTIFICATION RULE

Records Required at Each School

	Records on File		Comments
	Yes	No	
1. Name and address of school.			
2. List of all buildings associated with the school indicating: a. whether each building has been inspected			
b. which buildings contain friable materials.			
3. Copies of the Notice to School Employees (7730-3).			
4. For each building that contains friable materials			
a. a blueprint diagram or written description that identifies:			
- total area in square feet of sampling area			
- locations in which samples collected			
- sample ID number			
- indication of whether asbestos was present, and an estimate of the percent.			
b. copies of all laboratory reports and correspondence with labs.			
5. For each school that contains friable asbestos-containing materials: a. copy of the "Guide for Reducing Asbestos Exposure"			
b. copy of Guidance Documents Part 1 and 2.			
6. A statement that all role requirements have been satisfied signed by person responsible for compliance.			

Reproduced from best available copy.

Sampling Analysis

No samples will be taken during this inspection. If, however, you find friable materials, you should determine if samples were taken and what kind of sample was taken (scrap vs. core). At least three samples from locations distributed throughout the sampling area should have been taken for each distinct type of friable material found. The location of each sample was to be documented and included in the school's records. Form 6 provides a checklist which should be marked if samples were taken.

The LEAs were to have analyzed all samples using Polarized Light Microscopy (PLM). The schools should have records of all written correpondence with laboratories for each sample taken.

Note that if the school signed a statement saying that they will treat all pipe wrap or all friable materials as asbestos-containing, they didn't have to sample. If this is the case, indicate such under the comments section of Form 6.

Notification

Form 7 provides a check list relating to notifications to all School Employees and parent-teacher associations. A copy of all notifications should be on file at the school. You should examine all custodial areas and all administrative and faculty common rooms to see if notices have been posted and are readable. Indicate how many had notices posted (3 of 5, 2 of 2, etc.). Note any unusual circumstances in the comments section.

LEA: ______________________________

SCHOOL: ______________________________

BUILDING: ______________________________

EVALUATION OF ASBESTOS-IN-SCHOOL IDENTIFICATION AND NOTIFICATION RULE
CHECKLIST FOR WALK-THROUGH OF SCHOOLS

	SCHOOL RECORDS								WALK-THROUGH						
		Friable Materials		Samples Taken			Lab Reports on File			Friable Materials		Observed Where Samples Taken			
	Inspected	Yes	No	Yes	No	#	Yes	No	Inspected	Yes	No	Yes	No	#	Comments[1]
1. Boiler Room															
2. Machinery/Storage Room															
3. Other Pipe Wrapping (i.e., in classrooms)															
4. Sprayed/Troweled material above dropped ceilings															
5. Music/Band rooms															
6. Woodshop/Metal shop															
7. Auditorium															
8. Gymnasium															
9. Swimming pool															
10. Classrooms															
11. Bathrooms															
12. Administrative areas															
13. Cafeteria/Kitchen															
14. Hallways															
15. Encapsulated materials															
16. Removed Materials															

---

[1] Use additional sheets for comments as needed.

Form 6

EVALUATION OF ASBESTOS-IN-SCHOOLS IDENTIFICATION AND NOTIFICATION RULE

NOTIFICATION TABLE

	Yes	No
1. Custodians		
a. Were they informed? ________		
b. How were they informed? ________ ________		
c. Did they receive a copy of EPA Form 7730-2 "A Guide For Reducing Asbestos Exposures"? ________		
d. Were notices posted in custodial areas? ________		
2. Faculty/Administration		
a. Were they informed? ________		
b. How were they informed? ________ ________		
d. Are notices posted in faculty lounges? ________		
Administrative areas? ________		
Faculty common rooms? ________		
e. Did they use Form 7730-3? ________		
3. PTA		
a. Were they informed? ________		
b. How were they informed? ________ ________		
4. Does the school have copies of all notification letters, forms, etc. on file? ________		

Form 7

A copy of the "Guide for Reducing Asbestos Exposure" (EPA Form 7730-2) was to be distributed to all custodial or maintenance employees. You should ask the custodian if such notice was received.

Recordkeeping

Form 5 provides a list of all forms you should expect to find at the school. You should check to see that all EPA forms, or an equivalent form, are on file.

The Compliance Assistance Guideline provides a detailed list of all information required to be on file.

Task 3: Comments:

Extra sheets of paper will be provided for comments. Please include in the comments section your impressions of the LEA and schools regarding compliance to the Rule. For each school/building that you walk-through, provide a written report including as much information as possible. Take notes as you go. Do not be distracted by LEA officials who may attempt to let you see only what they want you to see. Included with this package are examples of two inspection reports prepared by Wolfgang Bradner showing the type of comments we would like from you.

1.4 Request for Final Report

Tell each superintendent and principal that you will be happy to arrange for their LEA to receive a copy of the final report. Mention that the name of their school will not be mentioned in the report as all data is presented as aggregated national figures. If they wish, they may fill out Form 8 to receive a copy of the final report.

EVALUATION OF THE ASBESTOS-IN-SCHOOLS
IDENTIFICATION AND NOTIFICATION RULE

REQUEST FOR FINAL REPORT

LEA SCHOOL NAME: ______________________________

LEA SCHOOL ADDRESS: ______________________________

____

____

REQUESTOR'S NAME: ______________________________

REQUESTOR'S TELEPHONE: ____________________

Form 8

QA VISIT FIELD MANUAL

APPENDIX A

EPA ASBESTOS-IN-SCHOOLS
OFFICIAL FORMS

Preceding page blank

7730-1

INSPECTIONS FOR FRIABLE ASBESTOS–CONTAINING MATERIALS

1. Please provide the following information about the local education agency:

NAME OF AGENCY	
CITY	COUNTY
STATE	ZIP CODE

Please fill in the following information about the schools under the authority of this local education agency:

2. The number of schools which have been inspected for friable materials in accordance with §763.105 of Title 40 of the Code of Federal Regulations.	
3. The number of schools where friable materials are present.	

If the answer to question 3 is none, disregard questions 4 – 7 and go on to the certification. Otherwise, fill in the following information about the schools enumerated in question 3:

4. The number of schools in which all friable materials have been sampled and analyzed in accordance with §§763.107 and 763.109 of Title 40 of the Code of Federal Regulations.	
5. The number of schools with friable material(s) that contain(s) asbestos.	

If the answer to question 5 is none, disregard questions 6 – 7 and go on to the certification. Otherwise, fill in the following information about the schools enumerated in question 5.

6. The total area in square feet of all friable asbestos-containing materials found in these schools.	
7. The total number of school employees who regularly work in schools where friable asbestos-containing materials are present.	

CERTIFICATION: Please read and sign below the following statement:

I hereby certify that this local education agency has complied with the EPA regulation 40 CFR 763.100 through 763.117, "Asbestos-Containing Materials in Schools Identification and Notification," and that the information on this form is, to the best of my knowledge, true and complete.

SIGNATURE	TYPED OR PRINTED NAME
TYPED OR PRINTED TITLE	DATE

Additional forms can be obtained by calling 800-424-9065 (554-1404 in the Washington, DC area).

EPA Form 7730-1 (8-82)

BILLING CODE [illegible]

Preceding page blank

7730-3 NOTICE TO SCHOOL EMPLOYEES

In accordance with EPA regulations, this school has been inspected for friable (easily crumbled) materials which contain asbestos. Friable asbestos-containing material may cause health problems.

Friable asbestos-containing material is present in

____
(Name of School)

A record of the inspection, a diagram of the location(s) of friable asbestos-containing materials, and a copy of relevant EPA regulations are available in

Building	Room

For further information, interested persons should call 800-424-9065 (554-1404 in the Washington, DC area).

Signed:

____
(Name)

____
(Title)

____
Date

EPA Form 7730-3 (5-82)

BILLING CODE 6560-50-C

U.S. ENVIRONMENTAL PROTECTION AGENCY

EPA 7710-29

ASBESTOS SURVEY REPORT

(Survey of Activities to Control Asbestos–Containing Materials in School Buildings)

Form Approved
OMB No. 158–R–0165

GENERAL

This information is collected under the authority of the Toxic Substances Control Act, Sections 6 and 8. EPA is compiling information on the progress of State and local programs to control exposure to asbestos–containing materials in schools. This form should be used to periodically report information concerning the asbestos control activities in your school district. To obtain more forms, call this toll–free number: 800–424–9065 or in the Washington, D.C. area, call 554–1404. Data collected in this survey will be subject to the provisions of the Freedom of Information Act (*5 U.S.C. 552).*

MAILING INSTRUCTIONS

DETACH HERE

MAIL ONE COPY TO: The EPA Regional Asbestos Coordinator for your Region. *(For names and addresses see reverse side.)*

ALSO, please mail a copy to your official State asbestos program contact *(for name and address, call this toll–free number: 800–424–9065 or if in the Washington, D.C. area, call 554–1404).*

IDENTIFICATION

1. SCHOOL DISTRICT INFORMATION

NAME OF SCHOOL DISTRICT

CITY OR COUNTY

STATE

ZIP CODE

2. PERSON TO CONTACT REGARDING THIS REPORT

NAME *(last, first, & middle initial)*

OFFICIAL JOB TITLE

TELEPHONE NO. *(area code & number)*

DATE *(mo., day, & year)*

SPECIFIC QUESTIONS

3. Has the school district submitted an EPA Asbestos Survey Report before?

☐ YES ☐ NO ☐ UNKNOWN

4. How many schools in the district were built or renovated between 1945 and 1978?

NUMBER OF SCHOOLS

5. As of ______ *(mo./yr.)*, how many schools in the district have been inspected for the presence of friable asbestos–containing materials?

NUMBER OF SCHOOLS

6. How many schools had bulk samples analyzed for asbestos with the EPA recommended technique of Polarized Light Microscopy?

NUMBER OF SCHOOLS

DETACH HERE

7. As of __________ *(mo./yr. of analysis)* for how many schools in the district was friable material analyzed as containing asbestos?

NUMBER OF SCHOOLS

8. (a) In how many schools was friable asbestos–containing material determined to present an exposure problem?
(b) Approximately how many square feet of this material were found?
(c) Estimate the number of children per school year exposed to this material. *(Multiply the percent of children exposed by the total number of enrolled students. e.g., An exposure problem in five classrooms may involve 15% of the total population of 700 students; 15% x 700 equals 105 students exposed.)*
(d) Have the names of the children been recorded and retained for future reference?

a. NO. OF SCHOOLS

b. SQUARE FEET

c. NO. OF CHILDREN

d. NAMES RECORDED ☐ YES ☐ NO

Questions 9 through 11 refer to the friable asbestos–containing material that presents an exposure problem in Question 8.

9. (a) Approximately how many square feet of this material have been or will be removed?
(b) What is the estimated total cost of removal?

a. SQUARE FEET

b. COST: $

10. (a) Approximately how many square feet of this material have been or will be encapsulated?
(b) What is the estimated total cost of encapsulation?

a. SQUARE FEET

b. COST: $

11. (a) Approximately how many square feet of this material have been or will be enclosed?
(b) What is the estimated total cost of enclosure?

a. SQUARE FEET

b. COST: $

12. (a) For approximately how many square feet of asbestos–containing material was action deferred?
(b) Will this material be inspected periodically to determine if an exposure problem exists?

a. SQUARE FEET

b. PERIODIC INSPECTION ☐ YES ☐ NO

DETACH HERE

13. What is the source of funding for the asbestos control activities in your district?

FUNDING SOURCE

14. When did *(or will)* the asbestos control activities in the district begin and end?

BEGINNING YEAR

ENDING YEAR

COMMENTS

EPA Form 7710–29 (3–79)

INSPECTIONS FOR FRIABLE ASBESTOS–CONTAINING MATERIALS

1. Please provide the following information about the local education agency:

NAME OF AGENCY	
CITY	COUNTY
STATE	ZIP CODE

Please fill in the following information about the schools under the authority of this local education agency:

2. The number of schools which have been inspected for friable materials in accordance with §763.105 of Title 40 of the Code of Federal Regulations.	
3. The number of schools where friable materials are present.	

If the answer to question 3 is none, disregard questions 4 – 7 and go on to the certification. Otherwise, fill in the following information about the schools enumerated in question 3:

4. The number of schools in which all friable materials have been sampled and analyzed in accordance with §§763.107 and 763.109 of Title 40 of the Code of Federal Regulations.	
5. The number of schools with friable material(s) that contain(s) asbestos.	

If the answer to question 5 is none, disregard questions 6 – 7 and go on to the certification. Otherwise, fill in the following information about the schools enumerated in question 5.

6. The total area in square feet of all friable asbestos-containing materials found in these schools.	
7. The total number of school employees who regularly work in schools where friable asbestos-containing materials are present.	

CERTIFICATION: Please read and sign below the following statement:

I hereby certify that this local education agency has complied with the EPA regulation 40 CFR 763.100 through 763.117, "Asbestos-Containing Materials in Schools Identification and Notification," and that the information on this form is, to the best of my knowledge, true and complete.

SIGNATURE	TYPED OR PRINTED NAME
TYPED OR PRINTED TITLE	DATE

Additional forms can be obtained by calling 800-424-9065 (554-1404 in the Washington, DC area).

EPA Form 7730-1 (6-82)

A GUIDE FOR REDUCING ASBESTOS EXPOSURE

PURPOSE

Your school building contains materials which contain asbestos and may release fibers into the air. Breathing asbestos fibers is dangerous. This fact sheet tells how to reduce exposure to asbestos fibers. Please read it carefully.

PROTECTING YOURSELF FROM ASBESTOS

Some of the friable building materials in your school contain asbestos. Friable asbestos-containing materials crumble easily and release fibers into the air. Breathing these fibers may cause cancer and other diseases. The more asbestos you breathe, the greater your chances are of getting disease. You can take precautions that will reduce or eliminate the risk of being exposed to asbestos.

Find out from your supervisor where these friable asbestos-containing materials are in your building. Do not touch or disturb them unless you have to. If you must handle an asbestos-containing material, first lightly spray it with water. (EPA recommends using water which contains wetting agents, if they are available.) Wet asbestos-containing materials will not release as many fibers.

Even if friable asbestos-containing materials are not disturbed, they may release asbestos fibers, which will fall slowly to the floor. If you are cleaning in areas which contain these materials, do not use a broom: it will stir the fibers into the air. Do not use a vacuum cleaner unless it is equipped with a High Efficiency Particulate Absolute filter. The fibers are so small they can pass through an ordinary vacuum cleaner and out into the room.

When cleaning in areas which contain friable asbestos-containing materials, use dampened mops and dustcloths. Dampened mops and dustcloths will hold the fibers much better than dry mops and dustcloths, and will reduce the number of fibers put back into the air. It is best to use mops with disposable heads and to throw away the mop head after use. Otherwise fibers will be released as the mop dries. Use either lightly dampened mops or cloths or a vacuum with a High Efficiency Particulate Absolute filter to clean areas where wet mopping cannot be used (such as carpeting or hardwood floors).

Clean tables and chairs in the area with damp cloths. Do not dust them with brushes or with dry cloths, and do not vacuum them.

After you use the mop heads and cloths, put them in a plastic bag while they are still wet. Dislodged materials should also be placed in plastic bags for disposal.

A LIST OF IMPORTANT POINTS TO REMEMBER

1. Do not handle or disturb friable asbestos containing materials unless necessary.
2. If you must handle asbestos-containing materials, wet them first
3. If you must disturb asbestos (for example, to repair a light), see your supervisor before starting work. Then;
    a. Place a plastic dropcloth below the work area.
    b. Spray asbestos-containing material with water before you disturb it.
    c. Make sure that only those persons who are necessary for the job are in the area.
    d. Put all the asbestos you remove into a heavy plastic bag. Seal the bag and discard it.
    e. After the job, clean all the ladders and tools you used with a wet cloth.
    f. Roll up the dropcloth carefully and put it in a plastic bag. Discard the bag.
    g. Clean the floor below the work area with a wet mop.
    h. Put the mop head and the cloth used to clean the ladders in a plastic bag while they are still wet, seal the bag, and discard it.
4. If you must disturb or remove large sections of asbestos-containing material, see your supervisor before you begin. The National Institute for Occupational Safety and Health recommends that a respirator approved for toxic dusts be worn during such work.

You should make arrangements to turn off the school's ventilation system if you are disturbing or removing large sections of asbestos-containing material. The ventilation system should remain off until the work is completed and the area has been cleaned.

EPA Form 7730-2 (6-82)

NOTICE TO SCHOOL EMPLOYEES

In accordance with EPA regulations, this school has been inspected for friable (easily crumbled) materials which contain asbestos. Friable asbestos-containing material may cause health problems.

Friable asbestos-containing material is present in

(Name of School)

A record of the inspection, a diagram of the location(s) of friable asbestos-containing materials, and a copy of relevant EPA regulations are available in

Building	Room

For further information, interested persons should call 800-424-9065 (554-1404 in the Washington, DC area).

Signed:

(Name)

(Title)

Date

EPA Form 7730-3 (6-82)

U.S. GOVERNMENT PRINTING OFFICE : 1982 O - 376-

REGIONAL ASBESTOS COORDINATORS

Mr. Paul Heffernan
EPA Region I
Asbestos Coordinator
Air & Hazardous Materials Div.
JFK Federal Building
Boston, MA 02203
(617) 223-0585

Mr. Arnold Freiberger
EPA Region II
Asbestos Coordinator
Woodbridge Avenue
Edison, NJ 08837
(201) 321-6668

Ms. Pauline Levin
EPA Region III (3SA-00)
Asbestos Coordinator
Curtis Building
Sixth & Walnut Street
Philadelphia, PA 19106
(215) 597-9859
597-8683

Mr. Jim Littel
EPA, Region IV
Asbestos Coordinator
345 Courtland Street
Atlanta, GA 30365
(404) 881-3864
FTS 257-3864

Dr. Tony Restaino
EPA Region V (5HT-16)
Asbestos Coordinator
230 S. Dearborn Street
16th Floor
Chicago, IL 60604
(312) 886-6003

Mr. John West
EPA, Region VI
Asbestos Coordinator
Interfirst Two Building
1219 Elm Street
Dallas, TX 75270
(214) 767-2734
FTS 729-2734

Mr. Wolfgang Brandner
EPA, Region VII
Asbestos Coordinator
324 East 11 Street
Room 1411
Kansas City, MO 64106
(816) 374-3036
FTS 758-3036

Mr. Steve Farrow
EPA, Region VIII (8AW-TS)
Asbestos Coordinator
Toxic Substances Branch
1860 Lincoln Street
Denver, CO 80295
(303) 844-3926
FTS 327-3926

Ms. JoAnn Semones
EPA, Region IX
Asbestos Coordinator
215 Fremont Street
San Francisco, CA 94105
(415) 974-8123
FTS 556-4606

Mr. Walt Jaspers
EPA, Region X
Asbestos Coordinator
1200 Sixth Avenue
Seattle, WA 98101
(206) 442-2632

FOR COPIES OF GUIDANCE DOCUMENTS AND RULE:	800-424-9065
FOR A VARIETY OF ASBESTOS-RELATED TECHNICAL ASSISTANCE AND INFORMATION:	800-334-8571 X6738
TO RESPOND TO QUESTIONS ON THE ASBESTOS-IN-SCHOOLS IDENTIFICATION AND NOTIFICATION RULE CALL DAVE MAYER	202-382-3949